

NATIONAL

FRAME

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RESEARCH & TECHNOLOGY

Using Soil Properties from
USDA/NRCS for
Post-Frame Design

SAFETY UPDATE

What Value Do You Place On
Your Employees or Those
Who Work For You?

BUSINESS MANAGEMENT

Preparing for the Economic
Recovery: Strategies to Help
Contractors Succeed in a
Changed Business Environment

LEGALLY SPEAKING

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The National Frame Building Association has entered into an agreement with the law firm of Auman, Mahan, and Furry to provide the NFBA membership with this unique service.

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Auman, Mahan, and Furry specializes in labor and employment law, discrimination, wage-hour, prevailing wage, workers' compensation, unemployment compensation, construction law, construction claims disputes, government contract disputes, occupational safety and health, pensions, fringe benefits, collective bargaining, litigation, and business law; including taxes and securities. The firm represents numerous business clients and various associations throughout the country, including NFBA.

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If additional services are needed, members can either contact their own attorney or retain the services of an attorney at AMF at a preferred hourly rate. Court costs, filing fees, and miscellaneous disbursements would be paid for by the member, and itemized by the firm.

WHAT DOES IT COVER?

The primary purpose of this service is to provide NFBA members the opportunity to discuss and identify legal problems, and to resolve general questions and concerns quickly through convenient access to specialized and qualified legal counsel. Each NFBA member is entitled to one 30 minute consultation per month either by telephone, email, or office conference, at no charge. It is understood that these consultations and conferences will be based on existing knowledge of the attorney without further research and analysis. When calling Auman, Mahan, and Furry, please ask for Gary Auman and identify yourself as a NFBA Member calling under the Legal Services Plan.

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Using Soil Properties from USDA/NRCS for Post-Frame Design

The purpose of this article is to explain how soil properties obtained from the USDA/NRCS Web Soil Survey can be used in conjunction with ASAE EP486.3 to obtain soil strengths for post-frame building design. It is also noted that the vertical and lateral soil strengths obtained from ASAE EP486.3 can differ significantly from the values obtained from IBC Table 1806.2.



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What Value Do You Place On Your Employees or Those Who Work For You?

Think about how important safety is to you. Each of us has a reason for everything we do in our professional lives, whether it relates to the types of buildings we erect, whether to expand our businesses, the building methods we decide to employ in our business, etc. One additional area of consideration is how much we choose to value our employees.



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FIND US   

Hello & Welcome



As you all have probably heard by now, the NFBA Board of Directors has made the difficult decision to postpone the NFBA's Annual Post Frame Expo scheduled for March 3-5, 2021 in Nashville, TN, due to the current and future impact of the COVID-19 pandemic. As important as this Convention and Expo is to all of us, your safety and well-being is paramount to the NFBA.

We know that exhibitors and attendees alike were excited to get to Nashville, and the good news is, we have secured dates for January 18 – 20, 2022 at the Gaylord Opryland Resort & Convention Center where we will be celebrating NFBA's 50th Anniversary! If you would like to exhibit in 2022, please contact NFBA Expo Management at NFBA@heexpo.com or Phone: 630.434.7779.

Throughout 2021, NFBA will continue to offer and expand the practical and timely programs and resources you have come to rely on over the years. Even if we cannot physically be together, we can still offer strong support to one another through these challenges.

Thank you for your continued support of and participation in NFBA. Stay strong, safe, and healthy!

Rachel Pinkus, Editor
National Frame Builder Magazine



NFBA HELPS BUILD YOUR POST-FRAME BUSINESS
visit www.nfba.org/index.php/members-landing

A MESSAGE FROM

MATT GREINER
PRESIDENT, NFBA BOARD OF DIRECTORS



2021 is upon us. For many it's a time of both reflection and projection as we look back on the results of 2020 while also looking forward to the 2021 budget.

Last year was a year of many firsts. We were hit with a game-changing pandemic, rapidly soaring lumber prices, and in parts of the US massive storms. A lot happened we did not expect or plan for. It leaves us trying to predict and prepare for what's in store for 2021.

As we press forward, we must remember to be grateful for all we have and for what we have endured. Use the lessons 2020 taught us to be better prepared for the coming years ahead and to be more alert, present, resilient, and grateful.

NFBA is going strong, and our board and committees remain fully engaged to bring value to the post frame community. Crew training curriculum is on pace for completion and roll out. There will be some big announcements as it seems we may have partnership with a reputable education entity that will propel this new program forward with the thrust we have hoped for.

The Conference and Expo Promotion Committee is shifting plans for our new date in 2022. The Industry Promotion Committee continues its efforts to raise money through

the Post-Frame Advantage Program (PFA) for the good of advancing post-frame design and construction. Our Technical & Research Committee is taking a fresh look at the long-span roofing study. There is a lot at play.

While it's disappointing that we won't be seeing each other at Expo this calendar year, it is exciting to be in a new year full of hope and positive activity. All the best to you as 2021 gets into full swing.

A handwritten signature in black ink that reads "Matt". The signature is stylized with a large, sweeping initial 'M' and a cursive 'att'.

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NFBA is pleased to introduce the new Post-Frame Building Design Manual! The second edition of the manual—and the first new edition since the manual was originally published in 2000—is the ultimate tool for post-frame design. Eight chapters, 200 pages, and hundreds of photos, diagrams, illustrations and design tables cover everything you need to know about designing with post frame.

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Chapters include:

- Chapter 1 – Introduction to Post-Frame Buildings
- Chapter 2 – Building Regulations
- Chapter 3 – Structural Load and Deflection Criteria
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- Chapter 5 – Post and Pier Foundation Design
- Chapter 6 – Diaphragm Design
- Chapter 7 – Metal-Clad Wood-Frame Diaphragm Properties
- Chapter 8 – Post Design

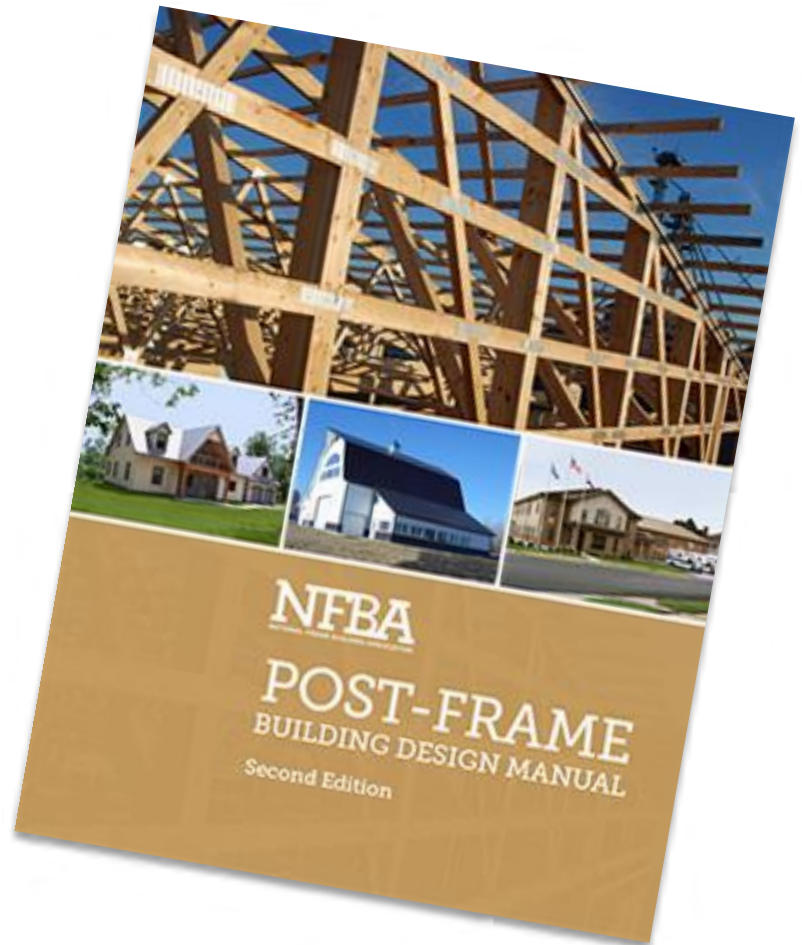
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Printed Version: \$110 for NFBA Members and \$185 for non-members





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PREPARING FOR THE ECONOMIC RECOVERY: STRATEGIES TO HELP CONTRACTORS SUCCEED IN A CHANGED BUSINESS ENVIRONMENT

The COVID-19 pandemic has affected many industries across the United States. Even though construction was deemed an essential business in many states, most contractors found that business was anything but normal.

Laura Cataldo
Baker Tilly



Whether dealing with remote employees, documenting pandemic-related harm, or navigating the rapidly changing terms of the Paycheck Protection Program (PPP) and the Coronavirus Aid, Relief, and Economic Security (CARES) Act, the last few months have been a period of rapid change. Many organizations are now focused on defining new business practices that are necessary to succeed in a changed business environment.

While there is still a lot of uncertainty about what the economic rebound will look like, focusing today on organizational stability allows contractors to minimize further disruption, protect their workforce, and strategically prepare to succeed in the recovery. There are 6 areas where you can take steps to secure your future.

The 6 key areas of business that contractors should assess and stabilize today include:

- Operations, profitability, and revenue;
- Client relationships and branding;
- Human capital and succession;
- Financial resilience and business optimization;
- Information technology (IT) infrastructure and cybersecurity; and
- Stabilization of subcontractors and suppliers.

Operations, Profitability, and Revenue

In “Recession Readiness: Value Protection Strategies for Contractors,” (<https://tinyurl.com/ycw4oeqx>)

which I wrote for the August 2020 issue, I stressed the importance of having a well-defined strategy as the starting point for all value protection. The performance model (see Figure 1), has not changed due to the pandemic—strategy still must be the core of all business decisions. COVID-19 has affected many industries, including your clients, key partners, and supply chains. The best way to ensure success in the recovering economy is to revisit your growth strategies, profitability targets, and operational processes.

It is highly likely that in January 2020, your strategic goals were aligned with the high-growth economy we all experienced. Post-pandemic opportunities will not be the same and likely will require that you reconsider your target markets and stay well connected to clients and project owners. Connect with these strategic relationships to understand the challenges they are facing and how their business will change moving forward.

As you have these conversations, investigate if there are new opportunities in response to the pandemic, such as increased demand in manufacturing of health and safety products, regional distribution centers to accommodate the increase in online shopping, or necessary facility renovations to protect resident and employee health. This should not sound like a sales call, but instead a conversation about how you can provide solutions to meet their changing needs.

Fragile economic times require a focus on increasing

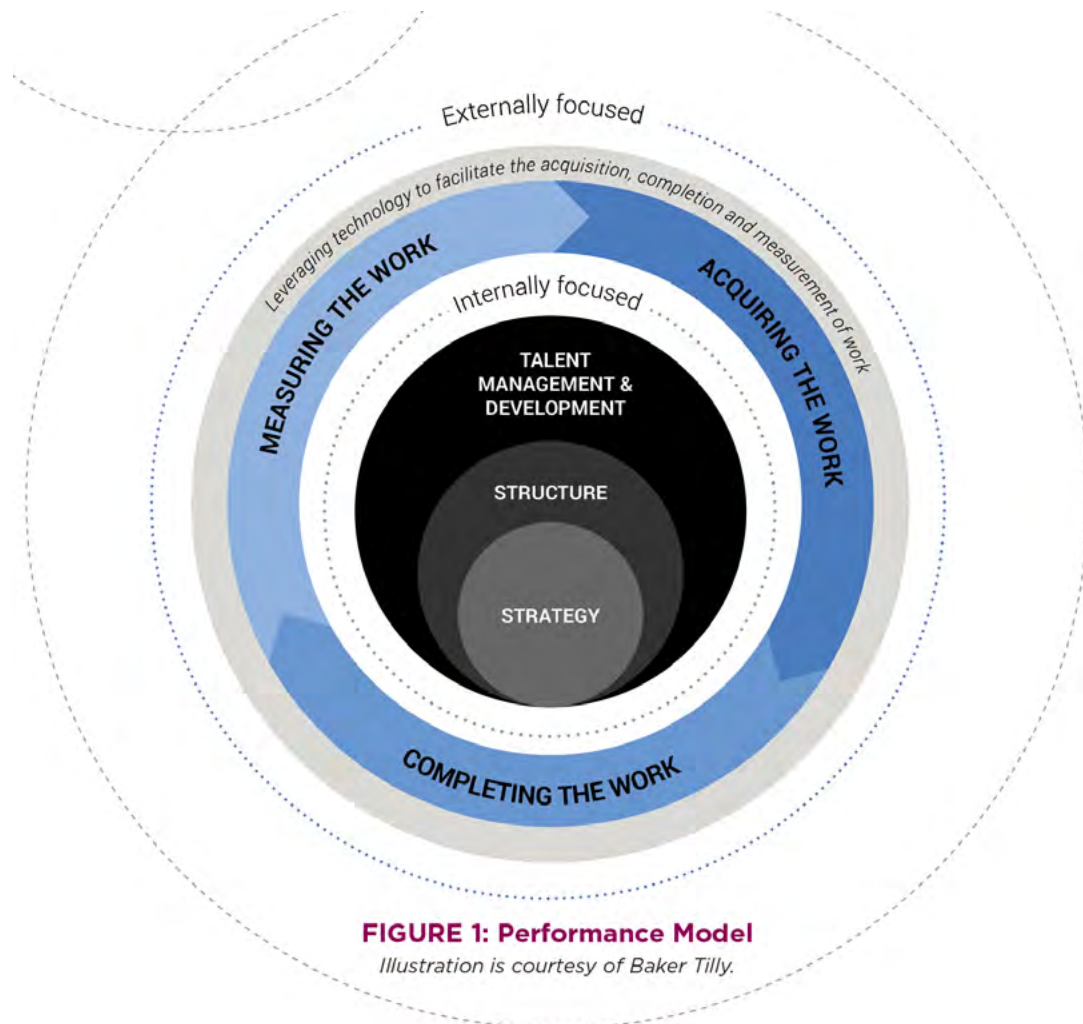


FIGURE 1: Performance Model

Illustration is courtesy of Baker Tilly.

You cannot manage or improve profitability if you are not measuring it. Define which key performance indicators (KPIs) have the greatest impact on your profitability, implement measurement dashboards or reports, and track performance on every project.

profitability, not volume. Utilize a risk matrix to evaluate your profit potential based on completed projects. The most common criteria when evaluating risk threshold are project size, project type, owner, and geographic location. Your threshold for risk might have been greater in more lucrative and stable times. A conservative approach focuses on projects that you already have experience with and are no more than 10% larger in size than past profitable projects. (Refer to the “Recession Readiness” article for more detail on assessing profit potential.)

You cannot manage or improve profitability if you are not measuring it. Define which key performance indicators (KPIs) have the greatest impact on your profitability, implement measurement dashboards or reports, and track performance on every project. Commonly tracked KPIs include change orders, labor costs/budget, margin gain/fade, and over/

under billings. Job performance analysis is always a best practice, but it will be especially critical in the post-pandemic economy as contractors are expanding into new customer and class categories to increase diversification.

Operationally, COVID-19 forced most organizations to change how they operated to maximize productivity of a newly remote workforce. Now is the time to evaluate which processes and procedures will serve you well moving forward, redefine position-specific roles and responsibilities, and invest in the appropriate technology to meet the needs of the organization moving forward.

Client Relationships and Branding

In-person interaction is what the construction industry is based upon. COVID-19 is forcing many contractors to evaluate how they will develop new

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client relationships and promote their company in a world that encourages limited in-person engagement. Redefining how customer transactions may be different in the future will help your employees be strategic in their communications. As discussed earlier, increasing the frequency of your meetings with key customers to understand and assess their needs is critical post pandemic.

It is also necessary to redefine how to develop new prospects during this time, when in-person networking is limited. Trade associations have always been invaluable sources for developing relationships with peers and potential customers. With budgets tightening, many organizations may have been considering not renewing their memberships, but the unique resources offered, keyed to your needs, make them more valuable than before. Trade associations provide ample opportunity for thought leadership and content pieces that can position you as a leader in the industry.

Take advantage of targeted print and digital advertising and digital engagement strategies to promote your thought leadership and educate potential and current customers with your knowledge and expertise. This requires that you commit the resources necessary to a more robust digital strategy, likely through outsourced expertise. An enhanced online presence is important for inbound, as well as outbound, messaging. Dedicate the resources to update your customer relationship management (CRM) system with your current clients and prospects to ensure both audiences receive messages. Monitor engagement of individuals through the CRM and utilize that knowledge to identify issues that create an opportunity for a conversation.

Human Capital and Succession

Prior to COVID-19, the construction industry faced many challenges related to workforce recruitment and retention. Now, as companies are trying to return to work, it is important to protect your most valuable asset.

Many organizations quickly adopted remote working strategies to reduce the number of employees working in the office and/or meet state and local mandates. As employees are being asked to return to the office, they may have mixed responses. Some employees are reluctant to return to the office for

health reasons, childcare situations, or a developed personal preference to working remotely. For some companies, daily life moving forward might include a greater percentage of employees working from home. Whether you are remaining flexible in work arrangements or requiring everyone back to the office, you should consider the following:

- Define return-to-work scenarios based on business recovery,
- Communicate transparently with employees about scenarios and ask for feedback based on individual challenges and needs,
- Revise safety plans for office and jobsites to reflect COVID-19-related standards,
- Ensure technology is adequate to support remote workers, and
- Measure and maintain employee engagement.

Well-defined positions with transparency in performance measurements will still be important. So, as you evaluate how process and procedures will be modified moving forward, ensure that position descriptions are updated so that performance expectations and the review process support the newly defined roles and responsibilities.

Prior to COVID-19, many contractors had embarked on a succession plan to prepare and develop their future leadership. It is also important to evaluate if/how transition plans and timelines have changed. Has a decision to diversify future work created opportunities for new “critical” roles? If so, do you have that talent available internally, or is this a good time to recruit critical hires? Understand the gap in leadership that may now exist, or newly defined positions that you need now to be successful in the future. As the economy recovers, employees working for companies that are struggling or not openly communicating future direction may see this as the right time to change employers. Key talent that you had a hard time securing in the past may be willing to make a change. Are you ready?

Financial Resilience and Business Optimization

Most industries have reported a negative impact on revenue and profitability in the last 6 months from aging receivables, slow cash flow, and liquidity.

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Understanding and properly managing cash flow is a best practice at all times, not just during or following a pandemic. The COVID-19 pandemic forced companies to navigate new ways of doing business and dealing with cash-flow concerns.

Having a 13-week cash-flow model (see <https://tinyurl.com/ybf7cdg6> on the Baker Tilly website) has proved to be an invaluable tool during this uncertain time. Why is it so critical now? A well-defined and regularly updated cash-flow model defines fixed and negotiable costs, identifies levers to trigger (if necessary) to improve cash flow, and defines non-core assets that can be divested to generate cash. Having this model available not only makes it easier for the leadership team to understand how to improve cash flow when needed, but also is helpful when seeking guidance from your accounting, financial, and legal partners.

Regular communication with your tax advisors and legal counsel on the PPP, the Economic Injury Disaster Loan, the CARES Act, or tax code changes also can provide liquidity opportunities during this time to assist with the financial impact of the pandemic.

We stress a 4-step process to building financial resilience with our clients.

1. Identify: Assess the key financial risks you may face and assign management accountability.
2. Respond: Define the actions you will take to manage or share the risks.
3. Monitor: Measure results and evaluate effectiveness.
4. Improve: Continually evaluate changing risks, actions plans, and measurements.

You can apply this process to any area of your company that has been negatively affected, such as accounts receivables (AR), loan covenants, a line of credit, payment terms, or delays. Here, we use aging AR as an example to illustrate the 4-step process. Aging receivables can have a direct negative impact on cash flow, as many companies have experienced over the last few months.

1. Identify: Your company's typical AR was around 45 days and is now approaching 60 days.
2. Respond: Define an AR escalation process that assigns accountability to team members to follow-up on payment on days 15, 30, 45, and 60.
3. Monitor: Monitor AR aging report on a weekly

basis to measure improvement.

4. Improve: Identify "at-risk" payables and develop a contingency plan, if necessary.

The effects of COVID-19 likely will continue and potentially deepen for companies that do not have financial resilience. Many businesses have focused on survival over the last few months, but now is the time to look forward, stress test the financial resilience of your organization, and establish strategies for improvement.

IT Infrastructure and Cybersecurity

When COVID-19 forced most companies to work remotely, many adapted quickly and sent employees home with the necessary laptops and monitors to remain productive. Yet, as weeks became months, many struggled with a lack of IT infrastructure, such as virtual private networks (VPNs) that were not designed to scale for a remote workforce. Cybersecurity attacks also have become a more common phenomenon, stressing the already overloaded IT systems.

While return-to-work scenarios are becoming more common, it is likely that remote workforces will remain a reality for many organizations. The COVID-19 disruption in how we used to do things has resulted in an expansion of collaboration tools to enhance team communication and productivity. Moving forward, we recommend that organizations continue to implement digital capabilities that will perpetuate the flow of information and core business processes.

The construction industry has been moving toward more cloud-based applications that require VPNs, which can support both internal and external sources. This requires that companies review their capacity management processes to account for demand expansion related to external service use. It also requires development of an IT infrastructure and protocols to support a more remote workforce.

Cyber threats are not a new phenomenon and are typically more of a nuisance than an actual threat. Most IT departments were not prepared for the increase in new and evolving threats (phishing, unsecure virtual meetings, and cyber-attacks), the physical security risks for remote devices, or home network security considerations.

The remote work environment created a new opportunity for cyber-attacks through collaboration

tools, such as Zoom, that became a common team communication tool. Companies responded quickly by instituting password protections, waiting rooms for external parties, and user authentication.

The stress and uncertainty surrounding COVID-19 also created a “phishing lure” for employees—evident in the numerous emails that appear to be from the World Health Organization, health departments, or safety providers. Unsuspecting employees would open the emails, play the voicemails, or click on advertisements that offered “valuable information,” only resulting in credential theft or ransomware. The best solution to this challenge is to step up cybersecurity monitoring efforts internally and externally, educate employees on how to identify cyber-attacks, and update your cybersecurity policy and protocol to cover remote devices.

Here is a list of recommended IT and cybersecurity practices to consider:

- Train remote workers on secure data handling from a home environment,
- Communicate remote-work cybersecurity practices,
- Validate security of web-enabled applications/systems,
- Increase use of multifactor authentication,
- Identify new COVID-19 threats through a cyber risk assessment, and
- Increase awareness of COVID-19 phishing attacks.

Stabilization of Subcontractors and Suppliers

The pandemic is disrupting both workforce and material availability. Contractors rely upon a supply-chain or subcontractors and suppliers to provide products for their operations, and it is important to understand how the supply base has been affected by the crisis. Many contractors are aware that some of their key supply chain partners are at risk because of material or workforce challenges.

An industry survey of contractors indicates that a growing number report material shortages and delays, especially from products sourced overseas. It is crucial to identify long-lead items and communicate about availability issues as early as possible to allow enough time for new options in both product selection and schedule coordination. Talk with your design professionals and subcontractors/suppliers about identifying any materials that might be delayed as soon

as possible, and identify the impact of those delays to project cost and schedule. Evaluate whether there are locally sourced alternatives available that will minimize disruptions to the schedule.

If workforce availability is negatively affecting a subcontractor/supplier’s performance, it is important to consistently monitor performance, discuss their ability to meet obligations, and identify potential cost or schedule changes. One way to minimize this risk is to avoid concentration of at-risk partners on projects and regularly conduct re-qualifications of their financial and workforce stability.

Creative solutions to supply-chain challenges are becoming more common. Many contractors are embracing prefabrication right now as a way to alleviate the challenges of worker distancing and compromised schedules. Offsite fabrication of components, delivered just in time to the site and then installed, may be an effective way to minimize the number of workers on a site without negatively changing the project schedule. Some contractors are evaluating acquisition opportunities to resolve this supply-chain dilemma and are expanding into new service or product line(s).

COVID-19 has likely forever changed the way businesses operate. Every organization and every industry has been impacted in some way. Companies that emerge from this time successfully will focus on developing resilience—the capacity to recover quickly from challenges. As economies reopen, assess your preparedness, evaluate the business strategies and practices you have adopted, and focus on building resilience across your organization.

Laura Cataldo is a Senior Manager with Baker Tilly (www.bakertilly.com), specializing in work with construction companies. She has experience in evaluating business practices and assisting with management challenges in construction-related firms of all sizes. She can be reached at laura.cataldo@bakertilly.com.

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USING SOIL PROPERTIES FROM USDA/NRCS FOR POST-FRAME DESIGN

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Many current practitioners involved in embedded column foundation design for post-frame buildings follow International Building Code (IBC) Section 1806.2 for vertical strength design and soil load-bearing capacities, and Section 1807.3 for lateral strength design of embedded columns. IBC Sections 1806.2 and 1807.3 require knowledge of only two properties of the soil: the allowable vertical foundation soil load-bearing pressure capacity (in pounds per square foot, or psf) and lateral soil load-bearing pressure capacity (in pounds per square foot per foot of depth below natural grade, or psf/ft). These two values are listed in IBC Table 1806.2 for five broad classes of rock and/or soil, along with corresponding approximate designations of the Unified Soil Classification System (USCS). For example, for sandy gravel and/or gravel (GW and GP), a vertical foundation soil load-bearing capacity of 3,000 psf and a lateral soil load-bearing pressure capacity of 200 psf/ft are assumed, while for clay, sandy clay, silty clay, clayey silt, silt and sandy silt (CL, ML, MH and CH), a vertical foundation soil load-bearing capacity of 1,500 psf and a lateral soil load-bearing pressure capacity of 100 psf/ft are assumed.

The simplicity of having just two relevant soil parameters, both contained in a single table, is certainly attractive. However, despite this simplicity, IBC Table 1806.2 and the corresponding methods of IBC Sections 1806.2 and 1807.3 oversimplify multiple factors in both vertical and lateral soil load-bearing strength design. To address these factors, ASAE EP486.2, and its subsequent revision ASAE EP486.3, *Shallow Post and Pier Foundation Design*, were developed. These engineering practices, which are referenced by the IBC as acceptable alternatives to its own foundation requirements for post-frame buildings, represents a great step forward, both in a correct understanding of geomechanics, as well as in conformity among building codes. For example, the soil bearing strength calculations of ASAE EP486.3 Section 10 are very close to the corresponding calculations of soil bearing strength in the AASHTO *LRFD Bridge Design Specifications*, and the soil spring model (Universal Method) of ASAE EP486.3 Section 8.3 is conceptually similar to the soil spring model used in the structural analysis of laterally loaded bridge piles.

The purpose of this article is to explain how soil properties obtained from the USDA/NRCS Web Soil Survey can be used in conjunction with ASAE EP486.3 to obtain soil strengths for post-frame building design. It is also noted that the vertical and lateral soil strengths obtained from ASAE EP486.3 can differ significantly from the values obtained from IBC Table 1806.2.

Soil Properties

The drawback of having any higher-resolution model, such as the soil models presented in ASAE EP486.3, is the need for more detailed input data. Indeed, this is one reason why many engineers are probably still using Table 1806.2 of the IBC rather than ASAE EP486.3. In some cases, a full geotechnical report may be needed. However, in lieu of that, all of the soil data needed to supply the input parameters for ASAE EP486.3 design can be obtained from the USDA/NRCS Web Soil Survey online app (WSS Homepage). Note that ASAE EP486.3 Tables 2-5 specify adjusted factors of safety for every soil calculation depending on whether or not the soil input parameters have been obtained via on-site testing, or via a source such as the USDA/NRCS website, combined with ASAE EP486.3 Table 1.

The Web Soil Survey can be searched based on location, address, latitude and longitude, the Public Land Survey System (PLSS), or the included map. Once an area of interest has been specified on the map under the “Area of Interest (AOI)” tab, select the “Soil Data Explorer” tab, and under it select the “Soil Reports” tab. Once in the “Soil Reports” tab, select “Soil Physical Properties” in the list of options on the left side of the webpage, and under that select “Engineering Properties”. Clicking on the “View Soil Report” button brings up a list of engineering properties for the soils in the AOI, including the unified soil classification by depth of the soils at the site, as shown in Figure 1.



Figure 1: Partial soil report showing engineering properties obtained from the USDA/NRCS Web Soil Survey online app.

In the example shown in Figure 1, the soil type to a depth of 48 inches is “CL”, which according to the USCS is a homogeneous inorganic clay with low plasticity. Table 1 of ASAE EP486.3 lists different properties for a CL soil that depend on if the soil is a “soft”, “medium to stiff”, or “very stiff to hard” clay. These three CL categories are associated with moist unit weights of 125, 130, and 135 pcf, respectively. In the absence of in-situ moist unit weight data, a designer would select the most conservative option (which in this case is to assume a “soft” clay). For the example calculations that follow, a “medium to stiff” clay is assumed. In addition to the tabulated moist unit weight $\gamma = 130$ pcf, this clay has an undrained shear strength $S_U = 7$ psi, a Young’s modulus $E_S = 6,160$ psi, and a Poisson’s ratio $\nu = 0.5$. Note that none of these values are directly comparable to the values obtained from IBC Table 1806.2. To make such a comparison, the data obtained from ASAE

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EP486.3 Table 1 must be combined with the equations of ASAE EP486.3 Section 10 for vertical load-bearing capacity, and Section 11 for lateral load-bearing capacity.

To take a second example, if the soil type had been “GW”, which according to the USCS is a well-graded clean to sandy gravel, then, assuming a loose packing (which is most conservative), Table 1 of ASAE EP486.3 predicts a unit weight $\gamma = 135$ pcf, a drained internal friction angle $\phi = 35^\circ$, an increase in Young’s modulus per unit depth $A_E = 220$ psi/in, and a Poisson’s ratio $\nu = 0.3$.

Another important geotechnical parameter strongly influencing the strength of soils, both vertical and lateral, is water table depth. This parameter can also be obtained from the USDA/NRCS Web Soil Survey online app. Once in the “Soil Reports” tab, instead of selecting “Soil Physical Properties” as before, select “Water Features” in the list of options on the left side of the webpage, and under that select “Water Features”. Clicking on the “View Soil Report” button reveals a list of water features for the soils in the AOI, including the upper and lower limits of the water table depth depending on season, as shown in Figure 2.

The value of water table depth is significant in many ASAE EP 486.3 calculations. For example, if the upper limit of the water table depth is lower than the embedment depth of the column during all seasons, then footnote (e) of ASAE EP 486.3 Table 1 stipulates that the value of A_E for a cohesionless soil can be

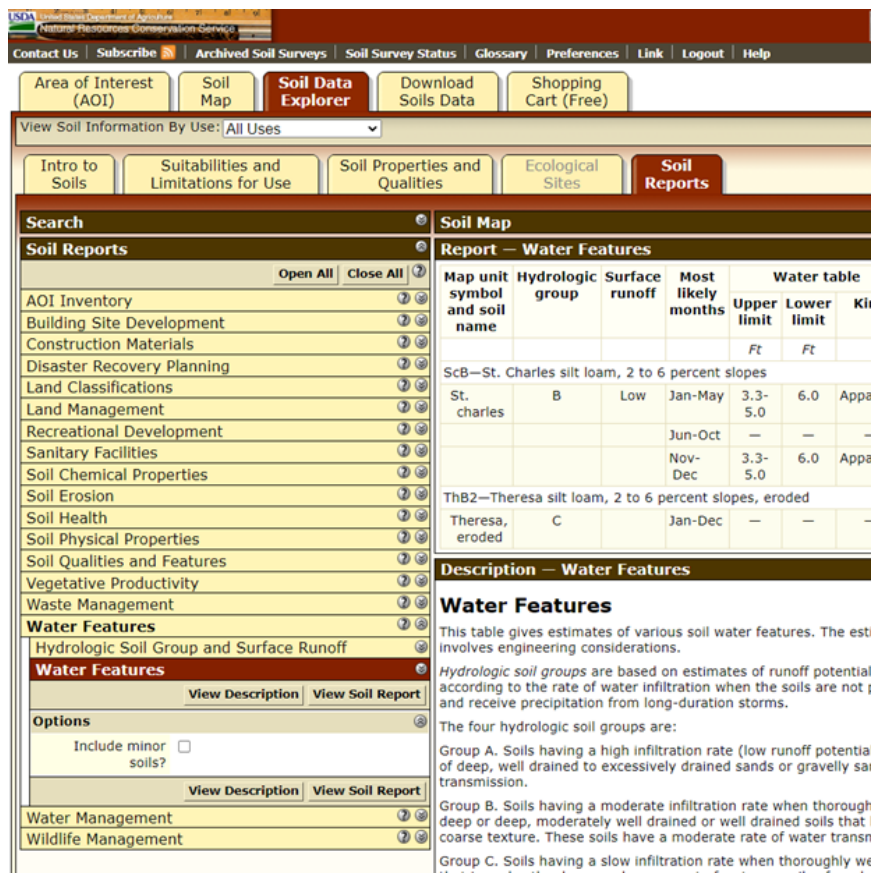


Figure 2: Partial soil report showing water features obtained from the USDA/NRCS Web Soil Survey online app.

doubled! Returning to the second example, this means that the increase in Young’s modulus per unit depth for loosely packed gravel (GW) above the water table becomes $A_E = 440$ psi/in, rather than $A_E = 220$ psi/in.

Vertical Load-Bearing Capacity

To compute the ultimate vertical load-bearing capacity q_B of the example soils of the previous section, the general bearing capacity equation in Section 10.4 of ASAE EP486.3 is used. There are two versions of this equation, one for saturated clay soils (such as clay or silt, which are the soils in the upper half of ASAE EP486.3 Table 1: CL, CH, ML, MH), and one for cohesionless soils (such as sand or gravel, which are the soils in the lower half of ASAE EP486.3 Table 1: SM, SC, SP, SW, GC, GP, GW).

For saturated clay soils, the general bearing

capacity equation is

$q_B = S_U N_C d_C s_C + \gamma d_F$, where:

$N_C = 5.14$ (for $\phi = 0$),

$s_C = 1.2$ for square or round footings,

$d_C = \begin{cases} 1 + 0.2d_F/B & \text{for } d_F/B < 2.5 \\ 1.5 & \text{for } d_F/B \geq 2.5 \end{cases}$

d_F = post or column embedment depth,

B = breadth (e.g., diameter) of footing.

For the example CL soil of the previous section and $d_F = 48$ in and $B = 12$ in, the general bearing capacity equation yields $q_B = 68.4$ psi. Note that this value is still not directly comparable with the presumptive vertical load-bearing capacity in Table 1806.2 of the IBC, since Section 10.2 of ASAE EP486.3 requires that the vertical (compressive) load P_{ASD} applied to the column divided by the bearing area of the footing should be compared with $(q_B - q_0)/f_B$, where $q_0 = \gamma d_F$ is the soil

overburden pressure, and f_B is a factor of safety obtained from Table 2 of ASAE EP486.3, which for soil of type CL is $f_B = 2.3$ or $f_B = 3.0$, depending on whether or not the soil type has been verified by construction testing. Even if $f_B = 3.0$, however, which assumes that the soil type has not been verified at the construction site, the value of $(q_B - q_0)/f_B = 21.6$ psi = 3,110 psf for CL obtained from ASAE EP486.3 is more than double the presumptive value of 1,500 psf for CL obtained from Table 1806.2 of the IBC.

For cohesionless soils, the general bearing capacity equation is:

$$q_B = \gamma \left(0.5 B C_{W1} N_\gamma s_\gamma + d_F C_{W2} N_q d_q s_q \right),$$

where:

$$N_\gamma = 2 \left(N_q + 1 \right) \tan \phi,$$

$$N_q = \exp(\pi \tan \phi) \tan^2(45^\circ + \phi/2),$$

$s_\gamma = 0.6$ for square or round footings,

$$s_q = 1 + \tan \phi,$$

$$d_q = 1 + 2 \tan \phi (1 - \sin \phi)^2 \tan^{-1}(d_F/B). \quad \text{continued on page 22}$$

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Here the values of C_{W1} and C_{W2} depend strongly on the depth of the water table, d_W , and are computed as:

$$C_{W1} = \begin{cases} 0.5 & \text{for } d_W \leq d_F \\ 0.5 + (d_W - d_F)/(3B) & \text{for } d_F < d_W < 1.5B + d_F \\ 1.0 & \text{for } d_W \geq 1.5B + d_F \end{cases}$$

$$C_{W2} = \begin{cases} 0.5 + 0.5d_W/d_F & \text{for } d_W < d_F \\ 1.0 & \text{for } d_W \geq d_F \end{cases}$$

For the example GW soil of the previous section and $d_F = 48$ in and $B = 12$ in, and a water table depth $d_W = 12$ in, the general bearing capacity equation yields $q_B = 184.2$ psi. For comparison, for a water table depth $d_W = 48$ in, this value becomes $q_B = 290.6$ psi. Note the strong influence of the water table depth d_W on q_B for a cohesionless soil. The factor of safety f_B for a cohesionless soil, which is still obtained from Table 2 of ASAE EP486.3, now depends on the internal friction angle ϕ . Assuming that the soil type has not been verified at the construction site, Table 2 of ASAE EP486.3 calls for $f_B = 6.1$, which results in $(q_B - q_0)/f_B = 29.6$ psi = 4,262 psf for GW obtained from ASAE EP486.3 for a water table depth $d_W = 12$ in. For comparison, for a water table depth $d_W = 48$ in, $(q_B - q_0)/f_B = 47.0$ psi = 6,768 psf. Note that both of these values are significantly higher than the presumptive value of 3,000 psf for GW obtained from Table 1806.2 of the IBC, with the value for the deeper water table being more than double.

Lateral Load-Bearing Capacity

When considering lateral soil response, there are two separate issues to address. First, there is lateral load-bearing capacity, which is addressed in Section 11 of ASAE EP486.3. This lateral load-bearing capacity is given in ASAE EP486.3 Section 11.2.1 as an ultimate lateral soil pressure $p_{U,z}$ which depends on depth z . Following the Universal Method of ASAE EP486.3 Section 8.3, the soil below grade is divided into layers, and the interaction of each soil layer with the embedded column is modeled as a lateral soil spring. An individual lateral soil spring yields (and provides a constant resisting force) when

the force in the soil spring F_{ASD} reaches F_{ult}/f_L , where f_L is a factor of safety obtained from Table 3 of ASAE EP486.3, and $F_{ult} = p_{U,z}tb$, where t is the thickness of the soil layer represented by the soil spring, and b is the face width of the embedded column at depth z below grade. Note that, according to Section 11.3.3 of ASAE EP486.3, all soil springs (except at most one soil spring at the pivot point) must yield for the soil to be said to fail under lateral load. In the interest of space, the formulas for the calculation of $p_{U,z}$ are not included here.

The second issue to address in lateral soil response is lateral soil stiffness. The stiffness of an individual lateral soil spring is given in ASAE EP486.3 Section 8.3 as $K_H = 2tE_{SE}$, where t is the thickness of the soil layer represented by the soil spring, and E_{SE} is the effective Young's modulus for the soil at depth z . For cohesive soils (the upper half of ASAE EP486.3 Table 1), $E_{SE} = E_S$ is constant, while for cohesionless soils (the lower half of ASAE EP486.3 Table 1), $E_{SE} = A_E z$ increases linearly with depth z below grade. These stiffness values determine the distribution of lateral forces among the soil springs, and thus also determine the overall structural response of the embedded columns below grade when the entire post-frame building is analyzed for lateral displacement under wind load (being careful to include diaphragm and frame interaction, or DAFI).

Figures 3 and 4 show distributions of lateral soil pressure $p_z = F_{ASD}/(tb)$, derived from the force F_{ASD} in each lateral soil spring, as functions of depth below grade for two embedded columns in a single frame of an example post-frame building subjected to wind loads. These results were obtained via a structural analysis of the entire building (including DAFI effects) using in-house finite element software developed by the author for Walters Buildings. Figure 3 shows the lateral pressure distribution for the cohesive soil example (CL), and Figure 4 shows the lateral pressure distribution for the cohesionless soil example (GW). Note the pressure discontinuity due to the change in the face width b of the embedded column at the

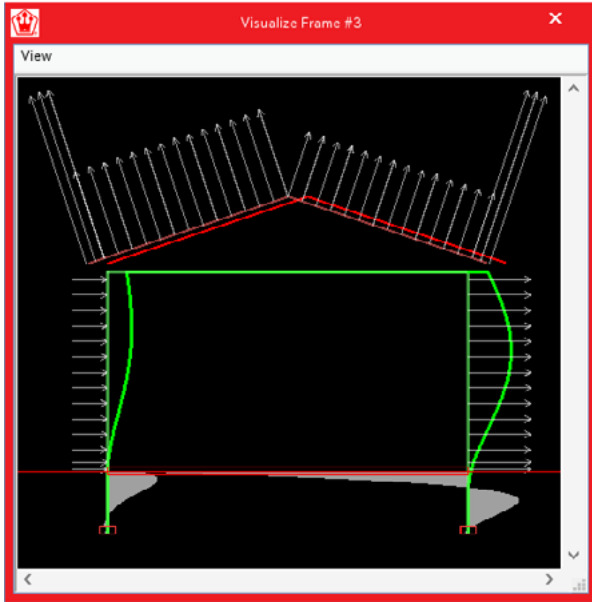


Figure 3: Cohesive soil example (CL) lateral pressure distributions as functions of depth below grade for two embedded columns in a single frame of an example post-frame building subjected to wind load.

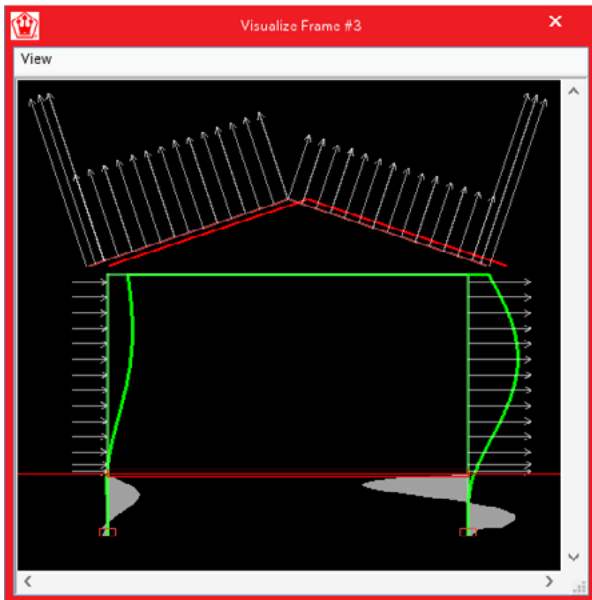


Figure 4: Cohesionless soil example (GW) lateral pressure distributions as functions of depth below grade for two embedded columns in a single frame of an example post-frame building subjected to wind load.

attached footing. Figures 3 and 4 also include exaggerated lateral displacement under the applied wind loads. Note the slight lateral displacements of the columns below grade. Also note the presence of a lateral constraint on one of the columns at grade due to the concrete floor.

All loads and displacements in Figures 3 and 4 are elastic (i.e., it is assumed that no soil springs are yielding). In order to accurately account for the plasticity of the soil springs, either an iterative finite element approach must be used, or the $V_U - M_U$ envelope method of EP486.3 Section 11.3.2 must be employed. Note that, according to EP486.3, lateral soil strength is not linear with depth, and so it is more difficult to make a meaningful comparison with the values obtained from IBC Table 1806.2 than it was for vertical soil strength.

Uplift Capacity

In the interest of space, calculation of soil uplift capacity, which is covered in ASAE EP486.3 Section 12, will not be summarized here. Soil uplift resistance is of utmost importance, since it is often the limiting design criterion, especially when embedment depth is relatively shallow. The calculations of soil uplift strength use the same soil data from the USDA/NRCS website, combined with ASAE EP486.3 Table 1, as in the examples of the previous sections.

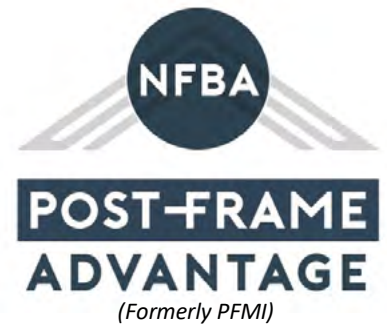
Conclusion

In this article, soil data from the USDA/NRCS Web Soil Survey online app was used to compute vertical and lateral soil load-bearing capacities according to Sections 10 and 11 of ASAE EP486.3. The examples contained herein should make it clear that, while attractive for its simplicity, the approach of IBC Table 1806.2 for post-frame design oversimplifies multiple factors, which can lead to significantly lower (i.e., more conservative) soil strengths when compared to ASAE EP486.3. Since the only drawback of ASAE EP486.3 is the need for more detailed soil input data, the fact that this data is readily available from the USDA/NRCS Web Soil Survey online app will hopefully make the use of ASAE EP486.3 more prevalent in post-frame building design.

References

IBC 2018, International Building Code
ANSI/ASAE EP486.3 SEP2017, Shallow Post and Pier Foundation Design
WSS Homepage, <https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm>, accessed 1/6/2021

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PFA UPDATE

TWO ITEMS EMPLOYERS NEED TO KNOW NOW



Amy Mitchell
Auman, Mahan, & Furry



Donald Rineer
Auman, Mahan, & Furry

Whether dealing with remote employees, documenting pandemic-related harm, or navigating the rapidly changing terms of the Paycheck Protection Program (PPP) and the Coronavirus Aid, Relief, and Economic Security (CARES) Act, the last few months have been a period of rapid change. Many organizations are now focused on defining new business practices that are necessary to succeed in a changed business environment.

1. Required Paid Leave Under the FFCRA Ended On 12/31/20

- Paid leave, including emergency paid sick leave (up to 80 hours) and expanded family and medical leave (up to 12 weeks), under the Families First Coronavirus Response Act (FFCRA) was originally set to expire by its terms on December 31, 2020.
- Congress did not extend employees' entitlement to FFCRA leave beyond December 31, 2020 in the new stimulus package.
- Congress did extend the employer tax credits for paid sick leave and expanded family and medical leave voluntarily provided to employees between January 1 and March 31, 2021 in The Consolidated Appropriations Act, 2021.
- Employers are therefore not required to provide employees with paid leave under the FFCRA for COVID-19 related reasons after December 31, 2020, but may voluntarily decide to provide such leave.

2. Paycheck Protection Program (PPP) Loan Updates, Plus a New PPP Loan Is Available

- Forgiveness has been underway for first round of PPP loans – your lender has 60

days to process your forgiveness application and then the SBA has 90 days to process.

- Lenders are acting upon the SBA's stated intention to require all PPP borrowers with loans \$2 million or more to fill out questionnaires which, among other things, look into how the borrower actually fared after receiving the loan.
- The new law clarifies that deductions are allowable for expenses paid with forgiven PPP funds.
- Basic eligibility requirements for the new second draw PPP loans:
 - Must employ less than 300 employees
 - Must have already used (or intend to use) the full amount of money granted in their first round of PPP funding
 - Must demonstrate at least a 25% reduction in gross receipts during the first, second, third or fourth quarter of 2020 relative to the same quarter of 2019
 - Maximum loan amount of \$2 million
 - May only receive one PPP second draw loan

If you have questions about paid leave or any other FFCRA-related issue, please reach out to Amy Mitchell (acm@amfd Dayton.com). If you have any questions regarding PPP issues, please reach out to Donald Rineer (dbr@amfd Dayton.com).

PRODUCT PROFILE



When comparing Standard, Premium and Metallic finishes, Metallic PVDF colors are the most expensive and normally carry a 10-12 percent cost increase over the standard PVDF colors.

WHAT IS THE COST DIFFERENCE BETWEEN STANDARD PVDF COLOR, PREMIUM PVDF COLOR AND METALLIC COLORS FOR METAL ROOFING AND SIDING?

Bossier City, La., November 17, 2020 — The paint used to coat metal roofing and siding panels has three basic components: pigment, which creates the color; solvent, which helps to dissolve the pigment; and binder or resin, which acts like the glue to hold everything together.

Kathi Miller
Architectural National Accounts
McElroy Metal



Due to differences in both pigment cost and the amount of pigment required; most metal panel manufacturers segment their PVDF offering into three pricing tiers.

Standard PVDF (Kynar 500/Hylar 5000) Colors

The first and lowest priced group is often referred to as the standard colors. These colors represent the bulk of the metal roof and wall panel industry. Given the basic laws of economics (the more you buy, the cheaper it is), most people expect this color offering to be the least expensive. And they're right. But what many folks don't realize is that these colors require less pigment, so their lower cost is actually reflective of the fact that they are less expensive for paint manufacturers to produce.

While most of the colors in these groups fall in the white, beige or earth tone family, dark bronzes and blacks are also commonly included.

Premium PVDF (Kynar 500/Hylar 5000) Colors

While the Standard colors work

for most projects, there are times where something a little more spectacular is desired for the color of a metal roof or wall system. Often, the decision stems from the desire to match a corporate brand or perhaps a designer or owner wants all or part of a building to make a bigger statement. In those cases, Premium colors are often considered.

While there are many variables in the equation, a good rule of thumb is to allow 8-10 percent additional cost for colors in the Premium PVDF family. The additional cost stems from several factors.

First, the pigments used to produce these dramatic colors are more expensive than their standard color counterparts.

Secondly, Premium colors typically require more pigment (and less filler) than standard colors, which also makes them more expensive. As a side note, some of the colors in this family also carry a reduced paint warranty due to the performance of the pigments



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used in this process. So, if the warranty length is important, always check with a reputable manufacturer during the color selection process.

It's also important to note that the 8-10 percent upcharge for the premium colors "typically" applies only to panels and doesn't apply to labor, trims and accessories. Consequently, the total cost increase to move from a Standard to Premium color is often less than expected. As an example, for a 20,000 square foot standing seam roof, the cost difference to go from Standard to a Premium color might cost an additional \$3,000-\$5,000 total on the project. So, while it is a higher price, the cost difference is pretty negligible, especially if it's critical to the brand or building owner.

Colors in this family fall more into what you might call the exotics and include things like oranges, reds, vibrant blues, and greens.

Metallic PVDF (Kynar 500/Hylar 5000) Colors

Moving the discussion onto metallics, it's important to note that we're referring to metallic "colors." Metallic colors are completely different from an unpainted product like Galvalume or galvanized, which have an actual metallic coating.

When comparing Standard, Premium and Metallic finishes, Metallic PVDF colors are the most expensive and normally carry a 10-12 percent cost increase over the standard PVDF colors.

Like Premium colors, some of the higher cost can be attributed to higher pigment cost. In some cases, the coating lines which apply the paint to the steel are also required to run at slower speeds for metallic paints, which can increase cost.

It's also important to note that Metallic finishes can be directional, meaning they must be installed in the same direction to prevent perceived shade differences. Consequently, installers are required to take more care in the layout and installation of materials, so installation costs are often higher for Metallic coatings than they are for either Standard or Premium colors. And, while it may not impact cost, metallic colors tend to be "batch sensitive," meaning there may be slight differences between paint produced at different times. Using products from several different batches on the same project can create aesthetic issues and should be avoided whenever possible.

Colors in this family tend to be coppers, silvers, bronzes, and champagnes.

Summary

Keep in mind that the cost increase percentages outlined here are simply for budget purposes. If you have color or budget questions for an upcoming project or even want to chat more about the possibility of custom colors, contact us. We would love to help.



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7. I shall faithfully **stand behind the work I perform** and the products I sell in accordance with manufacturers' recommendations and warranty.
8. I shall, in good faith, furnish to the proper building authorities all certifications regarding professional or structural engineering and loading standards that are required of me.
9. I shall **encourage my fellow employees, my fellow members** of the National Frame Building Association, and my colleagues to adhere to this Code of Ethics.

Help grow your business by joining this distinguished group of post-frame builders.



INSIDE THE FRAME

MARK BILSTROM

Each Issue of Frame Builder Magazine will feature an article by National Frame Builder Magazine Editor, Rachel Pinkus, giving an inside, personal look at the lives of one of the many volunteer members that dedicate their time and treasure to NFBA and the post-frame industry.

BY Rachel Pinkus
National Frame Builder Editor



NFBA VICE PRESIDENT



CONTACT US
LESTER BUILDINGS SYSTEMS
1111 2ND AVE S
LESTER PRAIRIE, MN 55354
WWW.LESTERBUILDINGS.COM
PH: (800) 826-4439

Mark grew up near a small lake town in east central Minnesota later receiving his B.S. in Construction Management from North Dakota State University's (NDSU) College of Engineering & Architecture. "My interest in the construction industry/business began when I was young,

watching and helping my Dad build custom masonry (brick & stone) creations for commercial and residential projects."

After college, Mark moved to the Chicago, IL area. His career path has included natural gas pipeline system design and construction, facilities management, commercial construction administration and project management...and now post frame component manufacturing and construction. "I became familiar with Lester Building Systems in 1999 - 2000 while working for a different construction division of Butler Mfg. Co. (former owner of Lester). In 2013, while working in commercial construction elsewhere, I was given the opportunity to join Lester as the general manager of our customer-direct sales and construction business."

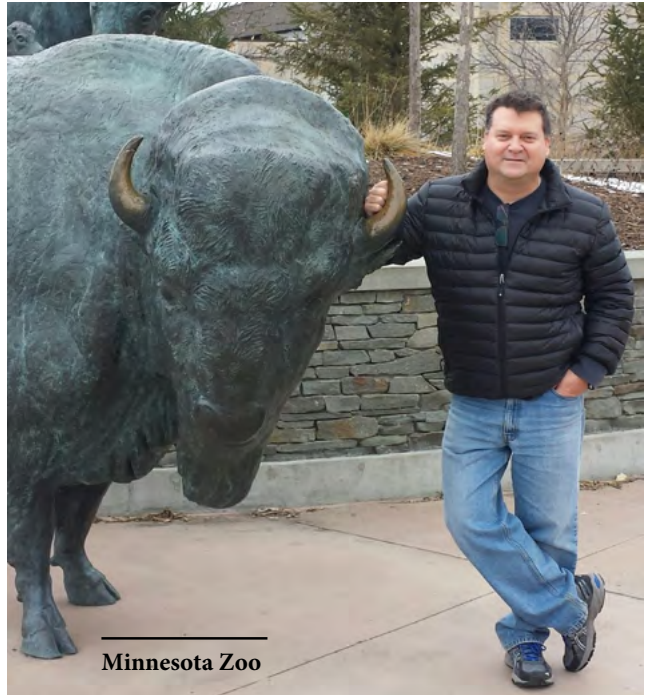
Mark met his wife, Beth, shortly after moving to Chicago and they have been married over 31 years. Beth is a multi-talented artist who does ink and watercolors, photography and writing. In 2000, they moved to Minnesota where they enjoy outdoor activities like bike riding, hiking, snowshoeing and yard/garden projects. Mark and Beth have three adult sons, all currently living and working in the Minneapolis/St Paul metro area: Jake (27), Joe (25), and Keller (23). Mark also enjoys watching college football and attending an occasional rock concert with his son(s) (pre COVID-19).

In his spare time, Mark volunteers through Grace Church in Eden Prairie, MN, and at "The PROP Shop" www.propshopep.org. His family is also a financial supporter of various "food shelf" organizations in the area.

"As someone relatively new to the post frame industry, NFBA membership and Board membership has given me the chance to quickly get to know and develop working relationships and friendships with many people in the industry. You get opportunities to better know vendors, suppliers, builders and even your competitors; in a positive, friendly environment. At Lester, we believe it is important to participate in and support the NFBA. Association membership and participation is a way to give back to your industry, while also gaining access to resources and benefits that might otherwise be unavailable."



McCullough Gulch Trail
Colorado



Minnesota Zoo



Mark and Beth



Beth and Mark with sons
Jake, Joe and Keller



The Menzingers Concert



For more than 40 years, the National Frame Building Association (NFBA) has represented the interests of builders, suppliers, distributors, academics, and code and design professionals serving the U.S. post-frame industry. Its mission is to lead and support members in their efforts to promote the growth and expansion of post-frame construction projects.

Join NFBA for access to resources that help you build your post-frame business.

Education

With the right information you can make smarter business decisions. You'll stay ahead of the competition while impressing your customers.

- **Technical Resources**—Learn best practices and new developments directly relevant to your business.
- **Frame Building Expo Seminars**—Attend discounted seminars at the Frame Building Expo.
- **Industry Trend Data**—Benchmark your performance against peers' performance and identify growth opportunities.

Growth

Opportunities abound for you to increase your business's bottom line.

- **Business Referrals**—Lead-generation programs send referrals straight to your inbox.
- **Penetration of New Markets**—NFBA's market development program advances post frame into new markets.
- **Exposure**—Be seen in directory listings in *Frame Building News* and on the NFBA website.

Advocacy

NFBA is the voice of the post-frame industry, and members gain instant credibility when they join.

- **Legal and Technical Expertise**—Obtain guidance from NFBA's experts at no additional charge.
- **Safety Programs**—Show your commitment to safety and earn goodwill from employers and customers.
- **Credibility**—Participate in the Accredited Post-Frame Builder program to earn credibility with customers.

NFBA Membership Categories

• **BUILDER MEMBERSHIP (\$475-\$3,300)**

Any individual proprietorship, corporation, or other legal entity that is engaged in the business of manufacturing, distributing, marketing, or constructing of post-frame buildings or post-frame building packages. Dues are structured incrementally by annual gross volume of business in millions of dollars.

• **NATIONAL SUPPLIER PARTNER MEMBERSHIP (\$1,625)**

Any individual proprietorship, corporation, or other legal entity that is engaged in the manufacture or supply of post-frame building components but is not selling building packages and assuming design responsibility for the building. *This category applies to supplier companies that provide services or products in seven states or more. Includes a \$500 assessment that will be put toward the Post-Frame Market Initiative.*

• **REGIONAL SUPPLIER PARTNER MEMBERSHIP (\$1,325)**

Any individual proprietorship, corporation, or other legal entity that is engaged in the manufacture or supply of post-frame building components but is not selling building packages and assuming design responsibility for the building. *This category applies to supplier companies that provide services or products in six states or fewer. Includes a \$500 assessment that will be put toward the Post-Frame Market Initiative.*

• **BUILDING MATERIAL DEALER PARTNER MEMBERSHIP (\$570)**

Any individual proprietorship, corporation, or other legal entity that is engaged in the sale or distribution of lumber, trusses, or building kits to the post-frame building industry. *Includes a \$220 assessment that will be put toward the Post-Frame Market Initiative.*

• **BRANCH/DEALER MEMBERSHIP (\$100) (Dealer 1st Year Only)**

Any individual proprietorship, corporation, or other legal entity that operates as a branch office (i.e., is wholly owned by, and operates under the same name as, a regular NFBA member) or as a dealer for another company with a different name that is a regular NFBA member in good standing.

• **DESIGN/CODE PROFESSIONAL MEMBERSHIP (\$120)**

Any individual who is engaged in the business of building design, is a licensed professional engineer or architect, or is involved in building inspection or code development and enforcement.

• **ACADEMIC MEMBERSHIP (\$100)**

Any individual who is primarily associated with an academic institution and has a particular interest in the post-frame building industry.

• **ASSOCIATE MEMBERSHIP (\$325)**

Any company engaged in a business rendering service to the industry but not qualifying for any other membership division.

• **STATEWIDE LISTINGS (\$100 each)**

Market your business in multiple states in which you provide services by purchasing statewide listings. Listings in all states, excluding Alaska and Hawaii, are available for purchase. Your organization will appear in all selected states in the "Find a Provider" NFBA website search results and in the *Frame Building News* directory.



National Frame Building Association Membership Application

This application must be completed in its entirety, or your membership cannot be processed.

Company Name _____
Company Address _____
City, State, Zip Code _____
Phone _____ Fax _____
Company E-mail (example: info@) _____
Primary Contact (will also be billing contact) _____
Title _____
E-mail _____

Referred by _____ Company _____
E-mail _____

A. Membership Level

Builder Membership

Select category according to your annual gross business volume (in millions).

0-1 \$475 1+ to 3 \$700 3+ to 6 \$1,280

6+ to 10 \$2,000 10+ \$3,300

Please indicate below what type of structures you erect or work on:

- Agricultural Buildings Commercial Buildings Residential Buildings
- Industrial Buildings Horse Barns/Facilities Suburban Garages
- Institutions (churches, schools, public buildings) Other _____

National Supplier Partner Membership \$1,625

(\$1,125 Membership Dues, \$500 PFMI Assessment)

Regional Supplier Partner Membership \$1,325

(\$825 Membership Dues, \$500 PFMI Assessment)

Building Material Dealer Partner Membership \$570

(\$350 Membership Dues, \$220 PFMI Assessment)

Please indicate below which products or services you provide or work on:

- Building Accessories Foundation Skylights
- Building Posts and Columns Products Software
- Business Resources Framing Storm Management
- Chemicals Products Structural Components
- Coatings Hardware Tools
- DIY Building Packages HVAC Trusses
- Doors Insulation Walls
- Engineered Components Lumber Windows
- Equine Machinery Other
- Fasteners Roofing Siding

Branch/Dealer Membership (Dealer 1st Year Only) \$100

Above, write the name and location of the parent NFBA member company's head office.

Design/Code Professional Membership \$120

Please indicate below which services you offer:

- Academic Engineering Architecture Design Consulting
- Structural Analysis Other: _____

Please indicate the types of structures you can work on:

- Agricultural Buildings Commercial Buildings
- Residential Buildings Industrial Buildings
- Horse Barns/Facilities Suburban Garages
- Institutions (churches, schools, public buildings)

Academic Membership \$100

Associate Membership \$325

Section A Total \$ _____

Additional Company Contacts

Company Owner's Name _____
E-mail _____
Marketing Contact Name _____
E-mail _____
Technical Contact Name _____
E-mail _____

B. Unified Chapter Dues (Mandatory)

Companies located in unified chapter states must pay an additional \$25 for chapter membership. These companies will hold membership in both their local chapter and the national organization. If you are located in a unified chapter state, please select your local chapter:

Atlantic Northeast (CT, MA, ME, NH, NJ, NY, PA, RI, VT) \$25

Mid Atlantic (DE, MD, NC, SC, VA, WV) \$25

Heartland (AR, KS, LA, MO, OK, TX) \$25

Section B Total \$ _____

C. Statewide Listing (Optional)

Please indicate on the line below the additional statewide listings you would like to purchase. (Cost for each additional listing is \$100.)

_____ additional listing(s) at \$100 each

Section C Total \$ _____

D. Gold Club Contribution (Optional)

NFBA Gold Club Members support the industry by making post-frame research and engineering possible. Membership is voluntary and is open year round. Members are recognized at the annual trade show and on the NFBA website.

50% of annual dues (not to exceed \$500) \$ _____

Section D Total \$ _____

Total of sections A, B, C, and D \$ _____

The undersigned hereby certifies that the above information is true and that, if accepted for membership by the National Frame Building Association, I/we will abide by the bylaws of the association and voluntarily agree to adhere to the association's Standards of Professional Conduct.

Signature _____

Date _____

Payment Information (select one):

Check enclosed Visa MasterCard AMEX Discover

Name on card (please print) _____

Account Number _____

Expiration Date _____

Billing Zip Code _____

Signature _____

Return completed form with payment to

NFBA • 7250 Poe Ave Suite 410 • Dayton, OH 45414 or Fax 937.278.0317 •



RAYMOND STOLTZFUS OF WHITE HORSE CONSTRUCTION, INC. PARKESBURG, PA

Congratulations to NFBA “Crew Foreman of the Month” for January, Raymond Stoltzfus of White Horse Construction, Inc. Parkesburg, PA.

Raymond Stoltzfus began his career at White Horse Construction, Inc. in 2013, and became crew foreman after gaining the respect of his crew members, the leaders at White Horse Construction, and the clients of his projects. His exceptional team leader skills, careful attention to detail, and aptitude to complete a project on time has enabled the success of many projects throughout the tristate area. He stands out as one of the finest at White Horse Construction, where he is known among the team for bringing a project to success while also leading his crew members with patience, respect, perspicuous training, and an open smile.

“I especially enjoy working on a team with Raymond because he is always happy to go out of his way to make sure that I know how to complete the job properly,” said one of his rookie crew members. His supervisor always has something good to say about Raymond. “Two things that amaze me about Raymond are his ability to switch gears instantly and consistently go the extra mile. This is featured in projects where the quick adaptations to new circumstances and intentional extra efforts

are paramount to the success of the project.” The head of the equine department at White Horse Construction is also impressed. “Raymond is very considerate towards the crew and does an excellent job being safe and efficient on his projects. His leadership and construction skills really earn him the position.”



It is most important to White Horse that each client have the best experience possible throughout

the many stages of construction. One of Raymond’s customers this summer, Nick Lykon, General Manager of A&A Machinery Moving, was overjoyed with his experience with Raymond as the crew foreman stating, “Raymond is a hero. I love working with Raymond. He is such a great guy, just bringing his name up brings me joy. I work with a lot of people across multiple industries and

after working with Raymond, I think he is just a wonderful representative of the spirit at White Horse Construction and exudes the qualities of the company.”

One of these qualities being his example of humility, as once expressed by Ralph Waldo Emerson, “A great man is always willing to be humble.” Raymond truly is a wonderful representative and crew foreman of White Horse Construction Inc. His hard work on and off the field from keeping productive and safe jobsite, orderly office paperwork, and investment in friendships steadily drives success. We are truly delighted and thankful that Raymond has chosen to do so well at White Horse Construction through the projects, team members, and customers that he affects around him.



Reno Project Before



Reno Project After



Reno Project After

WHATS NEXT

CALENDAR OF EVENTS



APR
14TH



NFBA \ WEBINARS

NFBA WEBINAR

DESIGN AID FOR SHALLOW POST AND PIER FOUNDATIONS
1:00PM - 2:00PM CENTRAL
ONLINE
800-557-6957 OR MMILLER@NFBA.COM
WWW.NFBA.ORG/INDEX.PHP/CALENDAR

APR
28TH



NFBA \ WEBINARS

NFBA WEBINAR

INTRODUCTION TO POST FRAME BUILDING SYSTEMS
1:00PM - 2:00PM CENTRAL
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MAY
12TH



NFBA \ WEBINARS

NFBA WEBINAR

2015 POST-FRAME BUILDING DESIGN MANUAL - 2ND EDITION
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JUL
14TH



NFBA \ WEBINARS

NFBA WEBINAR

MODERN POST-FRAME STRUCTURAL DESIGN PRACTICE: AN INTRODUCTION
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JUL
28TH



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NFBA WEBINAR

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AUG
11TH



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WHATS NEXT



FEB
24TH

NFBA \ WEBINARS

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MAR
10TH

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SIMPLIFIED METHOD FOR SHALLOW POST AND PIER FOUNDATION DESIGN
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MAR
24ND

NFBA \ WEBINARS

NFBA WEBINAR
UNIVERSAL METHOD FOR SHALLOW POST AND PIER FOUNDATION DESIGN
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MAY
26TH

NFBA \ WEBINARS

NFBA WEBINAR
2019 NON-DIAPHRAGM POST-FRAME BUILDING DESIGN GUIDE
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WWW.NFBA.ORG/INDEX.PHP/CALENDAR



JUN
9TH

NFBA \ WEBINARS

NFBA WEBINAR
NON-DIAPHRAGM POST-FRAME STRUCTURAL DESIGN EXAMPLES: ENGINEERING DETAILS
1:00PM - 2:00PM CENTRAL
ONLINE
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JUN
23RD

NFBA \ WEBINARS

NFBA WEBINAR
ARCHITECTURAL ALTERNATIVES FOR POST-FRAME BUILDING SYSTEMS
1:00PM - 2:00PM CENTRAL
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AUG
25TH

NFBA \ WEBINARS

NFBA WEBINAR
SIMPLIFIED METHOD FOR SHALLOW POST AND PIER FOUNDATION DESIGN
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SEP
8TH

NFBA \ WEBINARS

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SEP
22ND

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So, what does "all in" mean? It means that you will not only train your employees, but also ensure (guarantee) that they will use their training.

WHAT VALUE DO YOU PLACE ON YOUR EMPLOYEES OR THOSE WHO WORK FOR YOU?

As I have been considering a message to provide you in this issue of the NFBA Magazine, I want you to think about how important safety is to you. I believe each of us has a reason for everything we do in our professional lives, whether it relates to the types of buildings we erect, whether to expand our businesses, the building methods we decide to employ in our business, etc. One additional area of consideration is how much we choose to value our employees.

BY Gary Auman
Auman, Mahan, & Furry



I believe that each of you, either as a business owner or a supervisor in a business, has had to either directly or indirectly ask yourself that question.

What value do you place on your employees or those who work for you?

This question came to mind to me today as I participated in an employer-focused virtual webinar on COVID (NO this is not a COVID article). But something one of the speakers said in response to a hypothetical question resonated with me. She was given a particular situation and asked how she would advise her client based on the facts of that particular situation. She responded that while the law did not mandate the employer give deference to the employee; after she gave her client the “legal” advice she went on to say, “How you react to this situation will be based on what kind of an employer you are.”

That last point transfers fairly well to questions relating to safety. Let’s take a look at one of those. Are you the type of employer who fully values his/her employees and recognizes the valuable asset they are to your business? Or, are you the employer who looks at his/her employees as a “renewable resource?” Do you invest in your employees and get them the training they need

(if they come to you untrained in post-frame construction) to give them every chance at success with your company, or are you the employer who feels they will either “sink or swim” on their own merits thinking “I can always get another employee if this one does not work out?” If you are the employer who values his/her employees as a real asset, you are also the employer who will spend resources to see that your employees are trained in the safest ways to do their job. You will see to it that they have the best safety equipment available to do their job safely, and, for the sake of your business, that they will be in compliance with OSHA. When I refer to spending resources to protect your employees, I mean that you are willing to go “ALL IN” - to use a poker term - to protect your employees.

So, **what does “all in” mean?** It means that you will not only train your employees, but also ensure (guarantee) that they will use their training. It means that you will make sure they have the best safety equipment to protect them (note that I did not say the most expensive). You will also train them to use it correctly, whether it is PPE or machine guarding, and you will ensure that they follow their training. Let’s be honest with ourselves for a few minutes. How many of you have equipped your employees with the best

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PPE you can find, but either have said or would say if cited by OSHA because a compliance officer observed one of your employees not wearing the PPE you provided him/her – “I don’t know what more the government expects me to do! I bought my employees the best equipment, it is not my fault they don’t want to use it – OSHA should cite the employees.” You need to understand that your responsibility for the safety of your employees does not end when you write the check for the PPE and issue it to your employees. **Your responsibility for the safety of your employees NEVER ends.** It is yours because they are YOUR employees, AND you still must ensure that they follow your directions. Those directions to perform a task should **ALWAYS include direction to wear any required PPE and to use all equipment in a safe manner.**

Now you are probably saying to yourself – “OK, here comes Auman again telling me that I have to enforce my safety rules!” Yep, that is what I am telling you. And, you know one point that completely mystifies me is that many of you who shrink at enforcing your safety rules and directions will not hesitate a minute to take action against an employee who is two or three hours late for work, or has an unexcused absence, or performs a task incorrectly (not as they have been trained) that in turn adversely affects the quality of the building and may cost you hundreds of dollars to correct. You are worried about the several hundred dollars that you will spend to correct the employee’s poor judgment or skill in performing his/her job, but you fail to realize that your failure to ensure that those same employees are working safely could, in one instant, cost you tens of thousands of dollars in OSHA fines, or increased workers’ compensation premiums if an injury results.

The NFBA rolled out its [safety manual template](#) two years ago at Expo. How many of you spent the few dollars it costs to get an industry-specific safety program template? For those of you who did purchase one, how many of you have it sitting

on your desk or the desk of someone on your staff, but have never taken the time to use it to develop your own safety program? BEYOND the safety manual template, I think it is a measure of the concern that our industry has for safety that this year only three businesses were willing to take the time to complete the safety award application and invest the \$100 application fee to get a detailed assessment of several critical components of their safety program. Let’s go back to the second paragraph of this article – “What value do you place on the safety and wellbeing of your employees?” **What kind of employer are you?**

As you all should know by now, and as this article I hope demonstrates, **my commitment to our industry is to the safety of ALL employees.** To this end you have probably heard me say that if you feel you have a better way of protecting your employees than an OSHA standard requires, by all means have it objectively evaluated, and then use it to better protect your workers. BUT, there is a right way and a wrong way to go about this. The WRONG way is to assume that because you feel you have a better way to protect your employees than an OSHA standard requires, you can go ahead and use it and OSHA will ultimately understand and give you a pass. As I have said, this is the wrong way. I once represented a company that had employees performing tasks that exposed them to airborne lead. The lead standard requires an initial exposure assessment on each project before work begins. While waiting for the results of the monitoring, the employees were required to be provided appropriate PPE based on previous similar projects (not a negative exposure assessment). My client was very concerned about the safety of his employees, so he purchased the “top of the line” protective suits for employees to wear with supplied air. Since he was doing this, and since these suits were the best available protection, and were as good as or better than the best protection listed in the standard, he concluded it was not necessary to perform initial exposure monitoring.

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NFBA Frame Builder Magazine

Advertising Information and Contract



NFBA is the only national trade association that represents post-frame industry professionals. The association exists to support its members and stimulate the growth of the post-frame industry. For more than 50 years, NFBA has provided its members with the necessary industry tools and code resources, education, access to technical and legal experts, builder accreditation programs, post-frame market development updates, and networking opportunities.

Frame Builder Magazine is the association's bi-monthly publication with a combined print and digital circulation of more than 10,000 decision makers and key contacts across the country. Focusing on the topics that matter most to Post-Frame Industry Professionals, *Frame Builder Magazine* is the premier resource tool to reach NFBA members.

**Reach this target audience –
Reserve your ad space today**

	Editorial Calendar	Ad Deadline
January	Conference Promo	12/1
March	Post Convention Highlights	2/1
May	Industry News	4/1
July	Industry News	6/1
September	Conference Preview	8/1
November	Conference Promo	10/1

Issue Month	Size	Orientation or Placement	Rate
Jan	_____	_____	_____
Mar	_____	_____	_____
May	_____	_____	_____
Jul	_____	_____	_____
Sep	_____	_____	_____
Nov	_____	_____	_____
Total Cost			_____

NFBA Magazine Advertising Rates

B/W Ads	Number of Issues		
	1X	3X	6X
Full Page	\$ 2,900	\$2,755	\$2,617
1/2 Page	\$ 1,800	\$1,710	\$1,625
1/4 Page	\$ 1,050	\$998	\$948

Color Ads	Number of Issues		
	1X	3X	6X
Full Page	\$ 3,800	\$3,610	\$3,430
1/2 Page	\$ 2,700	\$2,565	\$2,437
1/4 Page	\$ 1,900	\$1,805	\$1,715
Back Cover	\$ 4,750	\$4,513	\$4,287
Inside Front	\$ 4,500	\$4,275	\$4,061
Inside Back	\$ 4,500	\$4,275	\$4,061

NFBA Magazine Advertising Specifications

AD	BLEED	TRIM	LIVE AREA
Full Page	8.75 x 11.25	8.5 x 11	7.5 x 10
Half Page Horizontal	7.75 x 5	7.5 x 4.75	7 x 4.25
Back Cover Page	8.75 x 8.25	8.5 x 8	7.75 x 7.25
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 check # _____

Please send contract to
chamann@nfba.org or fax 937-278-0317
Carroll Hamann NFBA 800-557-6957

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When OSHA visited one of his jobsites he was cited for failure to perform the required initial exposure monitoring. When I approached OSHA on his behalf I was advised by the area director that they recognized that his employees had the best protection available, but that even though the results of the monitoring could only have indicated lesser protection was needed, he had to be cited because he had not complied with the initial exposure testing mandated by the standard. We were finally able to negotiate the citation down to an “Other Than Serious” with no penalty, but he still had to abate the citation.

I then discussed with him the right way for an employer to avoid the requirements of an OSHA standard when better safety protection has been developed than a standard requires. I reminded him that even if he has developed a better means to protect his employees than the protection required by an OSHA standard, he must still file for a variance to be able to employ his method rather than the method required by the applicable standard.

I know many of you have worked to develop safety compliance methods that may not comply with a particular OSHA standard, even though you believe that **your method provides a level of protection as good as or better than OSHA may require**. You may be correct, but if the method you are using does not meet all of the requirements of the applicable OSHA standard, **you may need to file for a variance** to ensure that if inspected you will not be cited for using your method of compliance.

Because of the nature of our business, fall protection is one area in which your method of providing fall protection may not meet all of the requirements of the OSHA fall protection standards. Remember that **OSHA only recognizes conventional fall protection** (the types of fall protection set out in the OSHA standards, Subpart M). If the fall protection method you are using differs from the



methods stated in Subpart M, you either need a fall protection plan that meets the requirements of OSHA standard 29 CFR 1926.502(k), or you must secure a variance from the OSHA standards for your fall protection method. If you decide to try to use the fall protection plan approach of using some form of alternate fall protection, please remember that **you must develop a fall protection plan for each time you wish to use something other than conventional fall protection** to protect your employees.

In closing, remember to ask yourself the question – “What kind of employer am I?” I hope each of you can answer that question that you are the kind of employer who puts the safety of your employees ahead of every other consideration on a project. If you are, then you need to go to the second question – “Are the methods I am using to provide my employees with a safe worksite all the time also complying with the applicable OSHA standards?” If you feel you are providing effective safety, but that you may not be in full compliance with applicable OSHA standards, consider applying for a variance. In my next article I hope to provide you with more information on the procedure for obtaining a variance, among other safety-related matters..

About the author: Gary Auman is a Partner in the law firm of Auman, Mahan & Furry in Dayton, Ohio (www.amfd Dayton.com) and has over forty years of experience in OSHA compliance and litigation matters. Gary serves as General Counsel for many State, Regional and National Associations. He can be reached at gwa@amfd Dayton.com.

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