October 2012 $4.95

JLC

The Journal of Light Construction

Dense-Pack Cellulose

Working With Helical Piers

Leak-Free Stucco Walls

jlconline.com

Protect your investment and your reputation with Grace Ice & Water Shield® HT

Today's roof designs use more insulation and roof coverings that are designed to last a lifetime. This can result in very hot roof temperatures and potential failures which can create leak prone areas and other problems. Are you using the right HT underlayment? Some have good adhesion, but fail under high temperatures. Others have good high temperature resistance, but poor adhesion.

Grace's innovative, patented, high-temperature adhesive chemistry delivers the optimal balance between 240° F thermal stability and best in class adhesion. This balanced chemistry delivers a complete high temperature roofing solution – with no compromises.

The waterproofing you need. From the name you trust.

GRACE Ice & Water Shield® HT

Self-Adhered Roofing Underlayment For High Temperature Applications

GRACE

For more information visit graceconstruction.com

Go to http://jlc.hotims.com for more info

DETAILS MATTER

THE RIGHT BALANCE OF FEATURES FOR A FINE FINISH

BN200C NS150C

It's all about the details. In your finishing touches and our finishing tools. The Porter Cable BN200C 2" Brad Nailer has been updated from its previous version to be more compact, lightweight and easy to use. All at a lower price. Touting an oil-free design, rear exhaust, tool-free depth of drive, tool-free jam release and more, it's the right balance of features to add your finishing touches. The same great features also available in the NS150C Finish Stapler.

To learn more about Porter Cable Finish Nailers, visit portercable.com or stop by a retailer near you.

www.PorterCable.com

PORTER CABLE®

SURROUND YOURSELF WITH THOSE YOU CAN DEPEND ON.

THE FULL LINE OF RAM COMMERCIAL VEHICLES

BEST-IN-CLASS CAPABILITIES[1]

•

FUEL EFFICIENT ENGINES

•

UNSURPASSED 5-YR/100,000-MILE POWERTRAIN LIMITED WARRANTY[2]

•

UP TO $1,500 IN ON-THE-JOB INCENTIVES PLUS NATIONAL RETAIL INCENTIVES[3]

•

SPECIAL TAX SAVINGS[4]

GUTS·GLORY

BUSINESS LINK

ONTHE JOB

RAM

WE BACK YOUR BUSINESS WITH A DEDICATED DEALER NETWORK OF PROFESSIONAL SERVICE AND SALES SUPPORT, AND ON-THE-JOB INCENTIVES TO KEEP YOUR WHEELS TURNING AND YOUR BUSINESS RUNNING STRONG. THAT'S THE BENEFIT OF BUSINESS*LINK*®.

RAMTRUCKS.COM

1) See RamTrucks.com for details on individual capabilities for models shown. 2) See your dealer for a copy of the powertrain limited warranty. 3) See your dealer for official program rules. Must take delivery by December 31, 2012. 4) Maximum tax expense eligibility is $139,000; consult your tax advisor for more details. Properly secure all cargo. Ram is a registered trademark of Chrysler Group LLC.

From left to right: 2012 Ram Chassis Cab, 2012 Ram 3500 Heavy Duty, 2013 Ram 1500 Tradesman, 2012 Ram C/V Tradesman.

WWW.BEHRPRO.COM

BehrPro™ EXPERIENCE TOUR

JOIN US ON THE TOUR TO DISCOVER EVERYTHING YOU NEED TO BUILD YOUR BUSINESS.

The BehrPro℠ Experience Tour is Back!

- Demo **BEHR®** and **KILZ®** pro-quality products
- Enjoy our hospitality from 7 a.m. to 1 p.m.
- Enter for a chance to win one of four BehrPro Custom Paint Trailers worth over $10,000
- Walk away with a free gift
- Day-of-event promotions*

* Where available

Visit **behrproexperience.com**

facebook.com/behrpro
twitter.com/behrpro

Go to http://jlc.hotims.com for more info

Scan this code or visit **behrproexperience.com** for more tour information, store locations, event dates and official sweepstakes rules.

BEHR KILZ

Available at: THE HOME DEPOT

Contents

October 2012 • Vol. 31 • No. 1

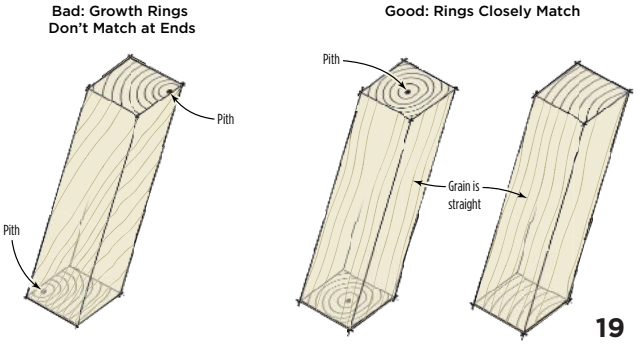
Features

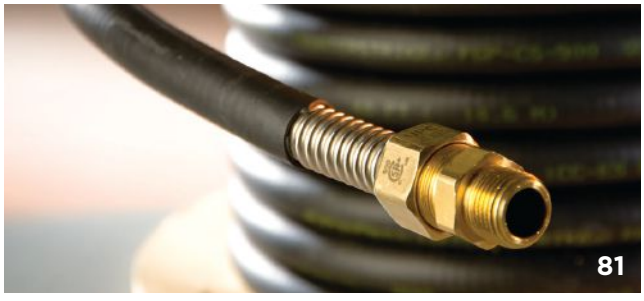
ON THE COVER: Constantin Taraburca of Cellu-Spray Insulation dense-packs a rafter bay in a house in Northampton, Mass. See the story on page 41. Photo by Jon Vara.

THE JOURNAL OF LIGHT CONSTRUCTION (ISSN 1056-828X), Volume 31, Number 1, is published monthly by Hanley Wood, LLC, One Thomas Circle, NW, Suite 600, Washington, DC 20005. Annual subscription rate for qualified readers in the construction trades: $39.95; nonqualified annual subscription rate: $59.95. Publisher reserves the right to determine recipient qualification. Canada Post Registration #40612608/G.S.T. number: R-120931738. Canadian return address: Pitney Bowes Inc., PO Box 25542, London, ON N6C 6B2. Periodicals postage paid at Washington, DC, and at additional mailing offices. **POSTMASTER:** Send address changes to *The Journal of Light Construction,* PO Box 5853, Harlan, IA 51593-1353.

Contents

Departments





Sentry® Safe Big Bolts FIRE-SAFE®, now just $199

Whether you're on the job site or in the office, you can have peace of mind knowing that your valuables and your business are secure, with live-locking bolts that are 60% bigger than in traditional safes, and an advanced fire safety rating. It's more affordable than ever to keep your business under lock and key. **That's the power of The Home Depot®.**

Go to http://jlc.hotims.com for more info

homedepot.com/pro

THE HOME DEPOT PRO

More saving. More doing.®

JLC The Journal of Light Construction
hanley wood

jlconline.com

Editorial Director Sal Alfano, salfano@hanleywood.com
Editor Don Jackson, djackson@hanleywood.com
Art Director Barbara Nevins, bnevins@hanleywood.com
Managing Editor Amy Doherty, adoherty@hanleywood.com
Illustrator Tim Healey, thealey@hanleywood.com
Senior Editor Jon Vara, jvara@hanleywood.com
Senior Editor Andrew Wormer, awormer@hanleywood.com
Assistant Managing Editor Laurie Elden, lelden@hanleywood.com
Contributing Editors Michael Byrne, Ted Cushman, Paul Fisette, Bruce Greenlaw, Carl Hagstrom, Dave Holbrook, Tom O'Brien, Joe Stoddard, Charles Wardell

Senior Web Developer Braddock Bull, bbull@hanleywood.com

Production Director Theresa A. Emerson
Digital Ad Manager Annie Clark
Ad Traffic Manager Katina Billado
Production Assistant Bernadette Parker

Audience Marketing Director Paul Ruess
Audience Marketing Manager Amy Barcomb
Customer Service Manager Lois Landa
Circulation Promotions Designer Chara Anderson
Reader Service Manager Ann P. Russell

Operations Manager Pam Brown

Group President, Residential Remodeling Rick Strachan
Group Publisher, Residential Remodeling Ron Spink
General Manager Online, Residential Remodeling Kim Heneghan
Director, Digital Media, Residential Remodeling Mark Taussig
Group Publishing Support Manager Helene Slavin

HANLEY WOOD BUSINESS MEDIA
President, Content Bob Benz
President, Market Intelligence Christopher Veator
President, Exhibitions Rick McConnell
V.P., Circulation & Database Development Nick Cavnar
V.P., Production Nick Elsener
V.P., Marketing Sheila Harris
V.P., Financial Planning & Analysis Ron Kraft

Published by Hanley Wood, LLC

Chief Executive Officer Peter Goldstone
Vice Chairman Frank Anton
Chief Financial Officer Matthew Flynn
President, Digital Andrew Reid
Senior V.P., Corporate Sales Paul Tourbaf
V.P., Finance Shawn Edwards
V.P., General Counsel Mike Bender

JLC LIVE RESIDENTIAL CONSTRUCTION SHOW
President, Exhibitions Rick McConnell
Director Jayne Dalton
Associate Conference Manager Julie Clifford
Construction Events Manager Don Dunkley
Operations Manager Rana Cham-Schultz
Marketing and Operations Coordinator Nicole Rohmer
Marketing Manager Kathy Raissifar
Marketing Coordinator Katie Lewis
Account Manager, Sponsorships Kelly Gutermuth
Account Executives Sean Greeley, Bob Martin
Online Sponsorships Rigo Retana
Registration Manager Vila Snider

Editorial & Advertising Offices: *The Journal of Light Construction*, 186 Allen Brook Lane, Williston, VT 05495, 802/879-3335, Fax: 802/879-9384.

Whether it's remodeling or replacement, Marvin has a solution. The broadest range of products combined with the most energy efficient options available means there's no better partner for exceeding your clients' needs. It's all part of four generations of innovation and craftsmanship backed by an unwavering commitment to service and support from local retailers. Get a closer look at our extraordinary range of replacement and remodeling options with our new, updated catalog.

Only at **pros.myMarvin.com/catalog**

Go to http://jlc.hotims.com for more info

MARVIN®
Windows and Doors
Built around you.®

ENERGY STAR

JLC The Journal of Light Construction
hanley wood

INFORMATION DIRECTORY

CONTACT INFORMATION
jlconline.com; 802/879-3335
JLC
186 Allen Brook Lane
Williston, VT 05495

EDITORIAL
We welcome letters and article submissions from our readers. Contact us by mail at the address above, Attn: Editorial Dept., or via email at jlc-editorial@hanleywood.com. Keep copies of all original materials.

SUBSCRIPTION SERVICES
For help with your *JLC* subscription, contact us:
Online: jlconline.com/cs
Email: jlc@cdsfulfillment.com
Phone: 877/277-2721
Mail: *JLC,* PO Box 5853, Harlan IA 51593-1353
You can subscribe online at: jlconline.com/getjlc.
Subscription rates for qualified readers:
1 year/ $39.95; 2 years/$64.95. Canada, International: add $15/ year for surface delivery. Sales tax required on subscriptions mailed to DC (5.75%), GA (4%), VT (6%).

JLC ARCHIVE/BACK ISSUES
JLC subscribers have free access to every issue of *JLC* since 1986. Enable your free access at jlconline.com/register. You can also purchase a DVD of all issues since 1986 at jlcbooks.com. Copies of individual back issues can be purchased for $4.95 each, plus $5 shipping per order. Call 877/277-2721 for availability.

ARTICLE REPRINTS
For custom reprints of *JLC* articles, call Brad Hairhoger at YGS Group, 717/505-9701, ext. 128, or 800/501-9571; brad.hairhoger@theygsgroup.com.

JLC BOOKSTORE
Hard-to-find construction books are available online at jlcbooks.com, or call 800/859-3669. The bookstore mailing address is: *JLC* Bookstore, PO Box 5853, Harlan, IA 51593-5353

JLC UPDATE EMAIL NEWSLETTER:
JLC Update, our email newsletter, is free to *JLC* readers. Each issue contains industry news and the latest tips on building materials, techniques, tools, and technology. Subscribe online at omeda.com/jlcupdate.

JLC LIVE
For information about the *JLC* LIVE Residential Construction Show, visit jlclive.com, or call 800/261-7769. For exhibitor and sponsorship information, call Kelly Gutermuth at 972/536-6473.

Privacy of mailing list: We rent our subscriber list to reputable companies. If you do not wish to receive promotional materials from other companies, please call us, toll-free, at 877/277-2721.


STRONGER. STRAIGHTER. SMARTER.
Steel Framing. It's how all decks will be built in the future. But why wait?
LIFE DECKING RAILING LIGHTING STEEL FRAMING FURNITURE DESIGN TREXPARTNERS.COM
TRUE Trex
Trex Elevations™
STEEL DECK FRAMING
Go to http://jlc.hotims.com for more info
©2012 Trex Company, Inc.

YOUTUBE.COM/KILZBRAND

“IT’S JUST AN EXCELLENT ALL-AROUND PAINT.”

DANIEL FURDOCK
Professional Painter, KILZ PRO-X User

KILZ® PRO-X™ INTERIOR PAINTS

This select line of interior paints was formulated exclusively for pros looking for fast application, superior touch-up, maximum coverage and exceptional value. The low-VOC, low-odor formula is optimized for spray, brush and roll applications.

“WHAT I LIKE ABOUT IT THE MOST IS WHEN IT DRIES, IT REALLY CLINGS TO THE TRIM, IT REALLY LAYS FLAT ON THE WALLS, AND IT’S EASY TO TOUCH UP IF SOMEONE DINGS IT.” – Daniel Furdock

Daniel is one of many pros impressed with the performance, quality and value of KILZ PRO-X™ interior paints. To hear what Daniel and other pros are saying about KILZ PRO-X, check out our online video series **Straight Talk From Pros** on our YouTube channel: youtube.com/KILZbrand.

Exclusively at:

THE HOME DEPOT

KILZ®

www.kilzpro-x.com

Go to http://jlc.hotims.com for more info

JLC The Journal of Light Construction
hanley wood

SALES OFFICES

HEADQUARTERS
Ron Spink Group Publisher, Residential Remodeling
(202) 736-3431 Fax: (202) 785-1974
rspink@hanleywood.com
Kim Heneghan General Manager Online, Residential Remodeling
(202) 380-3831 Fax: (202) 785-1974
kheneghan@hanleywood.com
Mark Taussig Director of Digital Media, Residential Remodeling
(202) 736-3406 Fax: (202) 785-1974
mtaussig@hanleywood.com
Helene Slavin
Group Publishing Support Manager
(202) 736-3428 Fax: (202) 785-1974
hslavin@hanleywood.com

NORTHEAST/MID-ATLANTIC
Jamie Volpe Regional Sales Manager
(203) 397-1231 Fax: (203) 397-1168
jvolpe@hanleywood.com
(Including CT, DC, DE, MA, MD, ME, NH, NJ, NY, PA, RI, VA, VT, WV)

MIDWEST/SOUTH CENTRAL/SOUTHEAST
Kay Ross-Baker Regional Sales Manager
(773) 824-2576 Fax: (773) 824-2401
krossbaker@hanleywood.com
(Including AL, AR, FL, IA, IL, KS, KY, LA, MN, MO, MS, ND, NE, OK, SD, TN, TX)

MIDWEST/SOUTHEAST
Trow Meier Regional Sales Manager
(773) 824-2417 Fax: (773) 824-2401
tmeier@hanleywood.com
(Including GA, IL, IN, MI, NC, OH, SC, WI)

WEST COAST
Ron Hewett Regional Sales Manager
(970) 669-1607 Fax: (202) 785-1974
rhewett@hanleywood.com
(Including AK, AZ, CA, CO, HI, ID, MT, NM, NV, OR, UT, WA, WY)

NEW ENGLAND/MID-ATLANTIC REGIONAL EDITIONS
Larry Rice Account Manager
(802) 324-0913 Fax: (802) 879-9384
lrice@hanleywood.com

CANADA
D. John Magner York Media Services
(416) 598-0101 Fax: (416) 598-9191
jmagner@yorkmedia.net

UNITED KINGDOM/EUROPE
Stuart Smith Regional Sales Manager
+44 (0)20 8464 5577 Fax: +44 (0)20 8464 5588
stuart.smith@ssm.co.uk

CLASSIFIED ADVERTISING
Maura Jacob Account Manager
(678) 451-8627 mjacob@hanleywood.com
Elle Fergusson Account Manager
(202) 729-3526 efergusson@hanleywood.com

DON'T GET CAUGHT WITH YOUR BATTERY DOWN.

FUEL GAUGE BATTERY

KEEP TRACK OF YOUR RUNTIME WITH OUR NEW FUEL GAUGE.

dewalt.com/20vmax

FUEL GAUGE

20V MAX* / LITHIUM ION

DEWALT

dewalt.com

Scan to learn more

* Maximum initial battery voltage (measured without a workload) is 20 volts. Nominal voltage is 18.

Go to http://jlc.hotims.com for more info

Letters

Say It Ain't So

Kudos on the article "Pouring a Structural Slab" (7/12); I am hoping to use such a slab in a project now on the drawing board. The article says that the structural slab added $55,000 more to the project, but please say it ain't so! I am hoping you really meant $5,500. I realize the project was in the Northeast, but I cannot imagine the whole garage costing as much as $55,000.


Pouring a Structural Slab

Commercial-grade steel deck pans worked well for placing the slab on this steep-site garage addition

by Mike Rockwell

Design Strategies

Linda Lloyd
Shelter Concepts
Bella Vista, Ark.

I'm afraid the costs were accurately reported. The foundation used in the article has, among other features, a 16-foot-tall reinforced concrete wall with a walkout opening on the downhill side, a slab in the storage area, and a pan-formed reinforced slab supported on steel I-beams overhead. Even given regional price variations, you could not get that kind of work for anywhere near $5,500 from a reputable concrete contractor. — The Editor

Cedar Roofing Needs to Dry

I appreciate your magazine and have relied on it for guidance for many years. I have been building a lot of garden sheds this year and am doing a fair amount of cedar-shingle siding and roofing. I read with interest the letter from David Mills, "Wood Shingle Roofing Tips" (6/12), in which he refers to "verticals" and "skippers." What do those terms mean?

I've often noted that on the underside of cedar shingle roofs there's a fair amount of seeping, especially in older buildings. New materials like OSB would never survive that treatment for long, but the roofing boards last indefinitely as long as they can dry.

Keep up the good work. I like down the down-to-earth, practical articles. There aren't a lot of high-end jobs these days; most of my work is run-of-the-mill stuff, but my goal is to do it well and put in the extra effort to make our product stand out. Happy customers means steady, good-paying work.

Jay Livesey
Bridgewater, Maine

"Skippers" refers to skipped sheathing — the gapped roofing boards you see when you look at the underside of a cedar roof, which, as you say, allow the roof to dry. You can't do much better than that on a small building like a garden shed. By "verticals," David Mills means the 2-bys that are run up the slope over the rafters and sheathing of an existing roof to provide soffit-to-ridge ventilation channels; these can be crossed by either horizontal skipped sheathing or another layer of sheathing. They might be used during a reroof for a built-up roof assembly in an insulated structure (see the photo below that David Mills kindly provided of 2x4 verticals on a double-sheathed job). — The Editor

Keep 'Em Coming

We are aware that many of you are having problems accessing parts of the newly upgraded *JLC* website. Thank you for your patience as we work out the bugs. Meantime, to make sure your mail is getting through, please address emailed letters to **djackson@hanleywood.com**.

Letters sent by post should be addressed to ***JLC* Editor, 186 Allen Brook Lane, Williston, VT 05495**.

Concerns about web access can be sent to **jlchelp@hanleywood.com**.

Thank you for supporting *JLC*. — *Don Jackson, Editor*

Visit us at STAFDA booth #846

BUILT R

Profile:

Projects this year: 22

Average work hours/week: 54

Personal: Married happily 12 years

Nails driven so far: 187,643

Community: 6 years youth football coach

Satisfied customers: 496

COMPRESSORS

PNEUMATIC TOOLS

AIR HOSES

COLLATED NAILS

FITTINGS & ACCESSORIES

Grip Rite™

BUILT RIGHT. GRIP-RITE.

grip-rite.com 800-676-7777

Go to http://jlc.hotims.com for more info

Breakthrough!

VOC Compliance

Advantage, Pro.

It's here. The breakthrough professional contractors, builders and remodelers have hoped for.

It's PROvantage. The industry's first complete line of construction adhesives that meet the most rigorous performance standards and the most stringent VOC regulations.

Advanced solvent technology
VOC compliant in all states
Performance without compromise™
Best-in-category value

PROvantage™
VOC COMPLIANT ADHESIVES
Go to http://jlc.hotims.com for more info

titebond.com/PROvantage
800.347.4583

Titebond®
THE PRO'S ADVANTAGE™

4-Pack
exclusively available at
LOWE'S
NEVER STOP IMPROVING

Q&A

Q. Is There a Way to Predict Which Pieces of PT Lumber Will Twist?

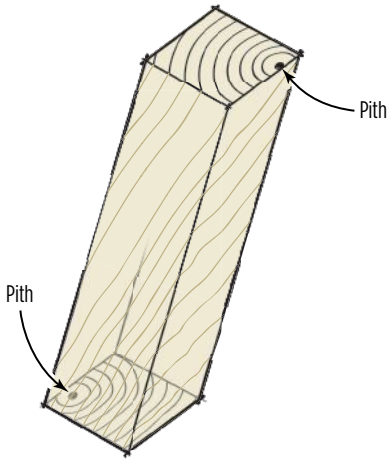
I find that a lot of the pressure-treated 4x4s and 6x6s I use twist badly after installation as they dry. It's not a structural problem, but it looks terrible. Is there any way to recognize pieces that are likely to twist so they can be culled before the problem comes up?

A. *Alexander Schreyer, a structural engineer and lecturer in wood technology at the University of Massachusetts Amherst, responds:* The twist you're seeing has two main causes. First, PT lumber contains a lot of water from the treatment process that needs to dry out. Second, the larger-sectioned square members are typically cut from the center of a log — you'll often see the pith at both ends. The wood cells in the first few growth rings are prone to distortion as they dry, especially when the growth rings are wide.

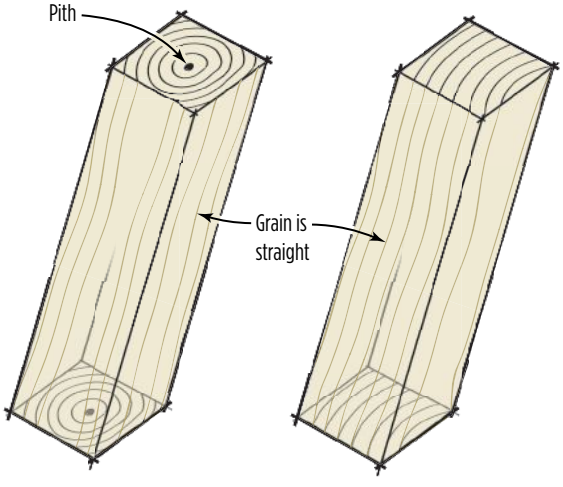
To minimize twisting, select pieces that have the pith as close to the center as possible at both ends, which indicates that the grain is straight. If the post doesn't come from the center of the log, look for pieces where the growth-ring orientation at the ends closely parallels one of the faces (see illustration, below). Again, a matching pattern at the ends indicates straight grain.

If you have time, stack the posts on stickers to allow them to air-dry before use. Coating the end grain with paint will promote even drying, and weighting the stack will help restrain movement as the wood dries.

Bad: Growth Rings Don't Match at Ends



Good: Rings Closely Match



Q. Are Guardrails Needed if Workers Wear Harnesses?

Under OSHA's fall-protection rules, does using a fall-protection harness take precedence over other forms of fall protection? For example, if a deck contains openings that would ordinarily have to be covered or protected with guardrails, could workers rely on harnesses and an anchor system that had been previously set up on the roof, or would the openings still have to be covered or railed off?

A. *Craig Firl, technical manager at Capital Safety in Red Wing, Minn., responds:* To give employers some flexibility, OSHA typically allows more than one option to protect workers from falling. For example, OSHA 1926.501 allows the use of personal fall-arrest systems, covers, or guardrail systems to protect workers on a walking or working surface that contains holes or skylights, and where the person could fall more than 6 feet. It's up to

Q&A

the employer to decide which approach — an "active" fall-arrest system or "passive" protection in the form of covers or guardrails — will work best in a given situation.

In general, it's best to use the approach that provides the highest overall level of safety and leaves the least room for error. If passive methods alone are sufficient to keep workers safe, there's no reason to use a more complicated active system instead. But if some activities on a job site require the use of a personal fall-arrest system, it might be most practical to use harness systems throughout the job for the sake of consistency. In that case, added passive protection would not be necessary.

Q. Installing Drywall Over Rigid Foam

Is it okay to install drywall directly over rigid foam? We're planning on installing 1½-inch polyisocyanurate foam on a sloped ceiling, and our drywall sub wants us strap over it before he hangs the wallboard. But because the upstairs ceiling is low to begin with, we'd rather not lose the added headroom if we can avoid it.

A. *Myron Ferguson, a drywall contractor in Galway, N.Y., responds:* These days, rigid foam is usually installed on the exterior, but back in the '80s I installed a lot of drywall directly over interior foam board — typically 1-inch foil-faced polyisocyanurate fastened right to the framing. We had to do several things differently to make that approach work. For example, the framers would attach wider nailers in the corners, and we had to mark joist and stud locations on the foil facing before hanging the boards. We also found that the nails used to tack the foam in place had to be set below the surface of the foam, or they might burst through the drywall's paper facing when we screwed the drywall down tight.

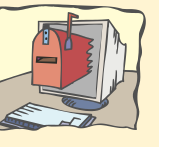
In those days, most of the homes I worked on had a sprayed popcorn-texture ceiling, so fastener problems weren't always obvious. On some smooth-finished ceilings, we'd occasionally see slight dimples around some of the screws, which I believe was caused by the foam expanding slightly as the attic heated up (the same thing never happened on walls). The screws themselves remained tight, but we still had to fix the problem by recoating with joint compound, sanding, and repainting.

If I were using the same detail today, I would use both construction adhesive and screws to fasten the drywall (after confirming that the foam, drywall, and adhesive were all compatible). Assuming the foam was properly fastened, this would require fewer drywall screws and might minimize the possibility of dimpling. I'd also use extruded polystyrene instead of polyiso, because it seems denser and less likely to dimple. And I wouldn't use foam thicker than one inch.

If you do install strapping over the foam, keep in mind that while the air space created by the furring will add to the assembly's R-value, it also can create air pathways into the walls or ceiling. Treat the foam rather than the drywall as the air barrier, sealing all edges, seams, and penetrations.

GOT A QUESTION?

Send it to Q&A, *JLC*, 186 Allen Brook Lane, Williston, VT 05495; or e-mail to jlc-editorial@hanleywood.com.



Sometimes closing windows and doors still leaves your home wide open.

We like to think our windows and doors keep the outside out. But poor sealing means air gets in, and power bills go up. That was the case for our friends in Great Falls, Montana, until we arrived with a truckload of GREAT STUFF™ Window & Door. It cures flexible and creates a durable, airtight, water-resistant bond. And unlike other sealing solutions, our GREAT STUFF™ low-pressure formula means frames won't bow or bend.

See how GREAT STUFF™ can be used in your home, and how we came to the rescue in Great Falls, at dowgreatstuff.com.

DOW®

Go to http://jlc.hotims.com for more info

SHIFT_ the way you move

NISSAN

BECAUSE NO ONE LIKES HANGING WETWALL.

The full-size NV Cargo combines the power of a truck with the utility of a van. It's got up to 323 cubic feet of secure, weatherproof space and a payload capacity of up to 3,925 lb.* Maybe the best pickup for you, isn't a pickup at all.

INNOVATION THAT WORKS. INNOVATION FOR ALL.®

NISSAN Commercial Vehicles

For more information, visit nissancommercialvehicles.com.

BUILT IN CANTON MISSISSIPPI

*Payload capacity based on NV3500 S standard roof. Always wear your seat belt, and please don't drink and drive. ©2012 Nissan North America, Inc.

Go to http://jlc.hotims.com for more info

On the Job

Slipping In a Structural Ridge

by Dennis Gehman

We like remodeling projects where design and structural challenges have to be reconciled. That was certainly the case with the whole-house remodel shown here. The 3,400-square-foot ranch had a low-pitched roof and 30-inch roof overhangs; part of the job was to open up the floor plan at one end of the house and replace the old, cramped kitchen **(1)** with a spacious great room **(2)**. This would require removing the center bearing wall and installing a stain-grade structural ridge beam.


1


2

Our engineer spec'd a 6¼-inch-by-16½-inch-by-30-foot glulam, with bearing posts at either end extending to concrete footings in the basement. The challenges were how to hold things up until the beam was in and how to get the beam into place. Because the design called for the beam to extend through the gable wall to the rake trim, we decided the easiest way was crane it into place from outside.

Before removing the interior bearing wall, we built temporary supporting walls on either side **(3)**. Cross-members stiffened the walls and supported a metal staging plank onto which we would slide the beam. With the temporary supporting walls in place, we removed the exterior portion of the old ridge, enlarged the opening at the gable, and added exterior braces to support the overhang **(4)**. (The interior portion of the old ridge board didn't need to be removed; the new beam was wide enough and sat low enough on the roof that the existing ridge could stay in place above it.) We erected pipe staging about 15 feet from the house (half the length of the beam), then stationed one worker at the top of the staging to help guide the beam toward the house and another on a ladder against the house to feed it into the opening.

Once the end of the beam had been guided into the hole at the gable, the crane operator set it down on the


3


4

plank **(5)**. The worker on the staging moved the strap from the center of the beam to the end closest to the crane, so that the crane could push it in most of the way **(6, 7)**.

Inside the house, we used 1-inch-diameter pipes to roll the beam into place **(8, 9)**. The pipes also proved useful in steering the beam: If it started to veer to one side, pivoting the pipes to one side or another would get it back on track.

The crane had to maintain some upward pressure on its end of the beam, which pushed the inner edge down into the plank. Because of this, we had to drive wood wedges beneath the other end of the beam to get it up onto each roller.

We used a pair of jacks to push the beam up tight against the rafters, then installed Parallam posts at each end **(10, 11)**. The exterior **(12)** was trimmed and stained to match the house siding.

The entire job took about four hours, with six of my crew and the crane operator.

Dennis Gehman *is president of Gehman Custom Remodeling in Harleysville, Pa.*

WHAT YOU NEED. READY AND WAITING.

THE HOME DEPOT PRO | FREE IN-STORE PICKUP WHEN YOU BUY ONLINE

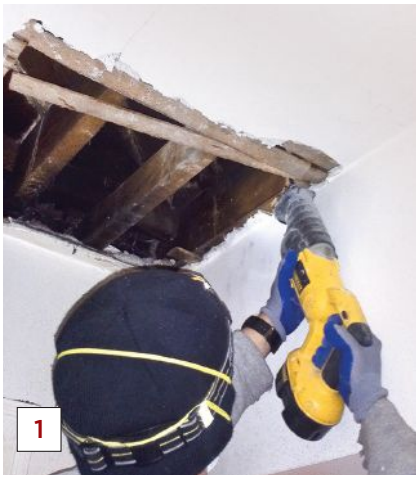
Buy the supplies you need, and have them ready and waiting for you at your closest Home Depot. Just find the supplies you want on homedepot.com, order them, and with two hours' notice, your order will be ready for pickup. Saving time and getting exactly what you need–**that's the power of The Home Depot®**

homedepot.com/pro
Go to http://jlc.hotims.com for more info

More saving. More doing.® THE HOME DEPOT®

Stabilizing a Brick Exterior

by Kyle Keever


1

Here in Seattle, we get occasional good-sized earthquakes that can damage the unreinforced masonry buildings common in some areas of the city. Recently my company completed a six-week job stabilizing the facade of a double-wythe structural brick apartment building. The repairs were not meant to be permanent; instead, the idea was to buy some time until the owner decides whether to make more extensive repairs or demolish the building. The inner wythe was in decent condition, but the bricks outside were spalling and deteriorating; the mortar crumbled when prodded with a screwdriver. Worse, the facade was gradually peeling away from the inner bearing wythe, leaving gaps up to 8 inches wide between the two layers in some spots.

The engineer's plan called for tying the exterior masonry to the existing floor framing with sections of threaded rod fastened to the floor joists. These tie rods — spaced 6 feet apart at each floor level — would extend through holes bored through both layers of brick to steel tie plates at the outside face of the building.

We used a Sawzall to cut through the

Three Things I've Learned: Tips from Seasoned Pros

plaster and wood lath at the junction of wall and ceiling **(1)**, then bored through the brick with a rotary hammer equipped with a 3/4-inch masonry bit. Fortunately, the brick was soft enough that the bit tended to emerge cleanly on the outside, provided we didn't apply too much pressure **(2)**. We secured the inboard ends of the rods to Simpson HDU2 hold-downs attached to the ends of the joists **(3)**. Where the rods emerged from the brick outside, we applied sealant, then capped them with 6-inch-by-6-inch-by-3/8-inch galvanized plates fabricated by a local metal shop. After threading on the galvanized nuts, we applied cold galvanizing compound to the ends **(4)**. Because of the risk of cracking the brick or mortar, we made sure to use a light touch when tightening the nuts; we turned them until they felt snug, but resisted the temptation to give that one last twist.

***Kyle Keever** is project manager with Keever and Associates in Bellevue, Wash.*

Crawlspace Caddy

by Wayne Sammons

Sometimes it seems I work in more than my fair share of crawlspaces, where I have to move around on my hands and knees while dragging my tools and supplies with me. To make these jobs a little easier, I came up with the tool caddy shown here.

It's a 20-inch-by-26-inch plastic mortar pan screwed through fender washers to a piece of ¾-inch plywood, with four 2½-inch dolly wheels mounted on the bottom — fixed wheels in back and swiveling wheels in front. For mobility, I attached a 15-foot-long tow rope to a screw-eye.

Since the caddy's less than 12 inches high, it fits easily underneath floor joists, even loaded with supplies. When I'm working at the far end of a large crawlspace, it's nice to be able to bring all my tools and supplies with me in a single trip — and to bring them out just as quickly.

Wayne Sammons *lives in Rehoboth Beach, Del.*

AirRenew®
Gypsum Board

absorbs VOCs and cleans the air

VALIDATED

- ✓ MEASURED PERMANENT FORMALDEHYDE ABSORPTION CAPACITY OF 0.4 G/M² OF SURFACE AREA
- ✓ MOLD RESISTANT PER ASTM D 3273
- ✓ RECYCLED CONTENT MINIMUM POST-CONSUMER 1.9%, PRE-CONSUMER 90.5%
- ✓ REGIONAL MATERIALS MINIMUM 88.5%

AirRenew is the only gypsum board that actively cleans indoor air by absorbing VOCs and turning them into inert compounds. How does it work? Scan the QR code or visit www.AirRenew.com

800-233-8990 • certainteed.com • http://blog.certainteed.com

ROOFING • SIDING • TRIM • DECKING • RAILING • FENCE • FOUNDATIONS
GYPSUM • CEILINGS • INSULATION • PIPE

CertainTeed
SAINT-GOBAIN

Go to http://jlc.hotims.com for more info


JLC
LIVE!
REGISTRATION IS
NOW OPEN!
ENTER CODE AD01
NORTHWEST 2012
OREGON CONVENTION CENTER
CONFERENCE: DECEMBER 5-7
EXHIBIT HALL: DECEMBER 6-7
PORTLAND, OREGON USA
JLCLIVE.COM
INTERESTED IN
EXHIBITING OPPORTUNITIES?
CALL: 800.471.2404

Our reputation is on the line with EVERYTHING we make!

Maze Nails is America's Largest Manufacturer of Specialty Nails

Ultimate corrosion resistant nails in double hot-dipped galvanized and stainless steel for the following applications:

- ★ FIBER CEMENT SIDINGS AND TRIM
- ★ CEDAR AND REDWOOD SIDINGS
- ★ PRESSURE TREATED LUMBER
- ★ FENCING
- ★ POST FRAME BUILDING
- ★ ROOFING
- ★ GUTTERS AND TRIM
- ★ PVC MOLDINGS AND TRIM
- ★ DECKING
- ★ LOG HOMES AND TIMBER FRAMES

MAZE NAILS

Use the RIGHT nails to get the BEST performance!

1.800.435.5949

Division of W.H. Maze Company

Helping to build America since 1848

Get to mazenails.com FAST!
Scan this barcode using an application on your mobile device.

Go to http://jlc.hotims.com for more info

BECAUSE IT'S EASIER TO SIZE THE WINDOW THAN RESIZE THE HOUSE.

ULTREX® PULTRUDED FIBERGLASS. THE ULTREX ADVANTAGE.

A remodel shouldn't mean a complete rebuild. That's why Wood-Ultrex® windows and doors made from our Ultrex pultruded fiberglass just make sense. Your customers get to restore toughness back into their homes with strong and durable windows that are sized to precisely what they need. Whether real wood or an Ultrex interior, each is teamed with a tough, patented acrylic finish that doesn't crack, chalk, streak or fade. All of which mean you're installing a brand that is tough, sized right and Built to Perform.®

Learn more about special sizes in Wood-Ultrex Series and get your free Integrity t-shirt at IntegrityWindows.com/SpecialSizes or by scanning the QR code.
Go to http://jlc.hotims.com for more info

Integrity from MARVIN Windows and Doors
Built to perform.®

Getting Paid for Preconstruction Advice

by Dennis Dixon

It's not uncommon for the sales process to end with the builder or remodeler acting as an unpaid consultant to a potential client. Most play this game hoping that the goodwill generated by such free advice will give them an inside track to the final construction contract. It seldom works out that way, though; more often than not, the job goes to someone else.

That doesn't happen to me. The reason is that my estimating process includes a contract that compensates me for the consulting time needed to complete the clients' plans and specs. I call the contract I've developed for this a professional services agreement, or PSA — and far from turning clients away, it has won me a good amount of business. In fact, half my construction contracts start with one. Here's how I sell and structure the PSA.

The Ideal Client

The first thing the PSA does is qualify potential clients. That's because the people who embrace the concept tend to be the easiest to work with.

The two least-desirable kinds of clients are price shoppers seeking multiple bids and "newbies" who haven't built or remodeled before. These people will always steer clear of professionals who insist on being paid for their expertise, preferring instead to milk every drop of free advice they can get before the information spigot is shut off.

On the other hand, people with experience in building and remodeling buy into the PSA concept quickly. Their priority is service rather than cost. They have had less-than-stellar experiences with other contractors and understand the value offered by a contractor with good communication, managerial, and paperwork skills. In other words, they're not bottom feeders; they realize that paying for real expertise will save them time, aggravation, and expense in the long run.

Note that even ideal clients may need to digest this concept when hearing it for the first time. If they ultimately refuse, however, they're really telling you that you don't want to work with them.

Selling the Concept

I usually bring up the PSA near the end of the first in-person meeting. During this meeting we discuss the project in general and ask each other questions, which gives us a chance to decide whether we want to

Key Clauses From Sample PSA

- The Specifications to be developed will become part of the Plans and the Construction Documents. Consultant (Dixon Ventures, Inc.) will provide an approximate construction price for the project based upon completed Plans and Specifications.
- Consultant will develop a Cost Estimate as the plans and specs are completed, based upon details, finishes, sizes, selections, and scope of work as directed by the Owner. Estimate will be delivered within 72 hours of Plan completion.
- The Architect is responsible for the accuracy of the actual blueprints. Discovery of design errors, omissions, and mistakes contained in the Plans is part of this process; the Consultant agrees to make good-faith effort to reconcile all issues with Architect and Owner for final clarification, but ultimately that is the responsibility of others.
- Construction of any kind is not part of these services or this agreement. Should client contract with Dixon Ventures, Inc., for construction of the residence, the cost of this agreement will be credited back toward the construction cost. There is no obligation on the part of the Owner to hire Dixon Ventures to build the project.
- Estimated cost for Consultant services is $250 per hour, or $17,500, for estimated project duration of 70 hours. A retainer of $4,375 will be required to begin; an additional $8,750 will be due after 35 hours, and the balance of $4,375 on completion. Should work exceed the estimated 70 hours, additional time will be charged at a rate of $85 per hour.

The author's PSA makes it clear he is to be paid for preconstruction consulting services, but that should he be awarded the contract, the fee will be applied toward the cost of construction. It also spells out the payment schedule for the work, just as any contract would.

ZIP. THE FASTEST WAY TO THE PERFECT TIGHT HOUSE.

Discover ZIP System® Sheathing and Tape. It's a one-of-a-kind structural roof and wall system with a built-in energy-efficient barrier that keeps moisture out and reduces air leakage, while still allowing panels to properly dry. Plus, it goes up in just two easy steps: 1. Install the panels, 2. Tape the seams. Fewer steps results in 40% faster installation when compared to traditional housewrap and felt. To save builders' time and homeowners' money, visit switchtozip.com.

ZIPsystem® ROOF & WALL SHEATHING

FROM THE CREATORS OF AdvanTech®

Go to http://jlc.hotims.com for more info

ZIP SYSTEM™ 30 YEAR SYSTEM LIMITED WARRANTY. Limitations and restrictions apply — visit zipsystem.com for details.

NAHB RESEARCH CENTER GREEN APPROVED

work together. Questions I ask concern the project goals, the budget, and their quality expectations. (One potential client was an aerospace engineer who expected the same tolerances on his home framing as on an aircraft engine. Since I don't own a framing micrometer, I passed on that job.)

If we seem like a good mutual fit, the next step is to show the clients that their plans and specs need work before an accurate estimate can be generated. (This is always the case — no one has ever brought me an A-grade set of plans and specs.) For instance, a finished set of plans should have a schedule for each room that specifies everything in the room: the windows, the carpet, the fixtures, and the like. When we look at the plans and find such detail lacking, it demonstrates that the plans aren't complete. I also show them an example of my specifications, so they know what a complete set looks like.

I offer to work with them on finishing the plans and specs for a fee. As an incentive, the amount of the PSA will be credited toward the eventual construction contract, if it is awarded to me.

To help the clients understand the amount of work that needs to be done, I'll usually work through a specific issue with them — something very detailed, like the exact door hardware and accessories they want on their kitchen cabinets. Since it's rare that anyone else has drilled down this deep with them, the exercise really helps reinforce my value. When they ask me if there are any other issues, I'll answer, "Yes, it looks like there are 15 of them" (or whatever the actual number is). At this point, I'll tell them that further consultation will require a PSA and a down payment.

I furnish them with references — a typed list of three past clients that used the PSA and eventually hired Dixon Builders for the work. These past clients have agreed in general to speak with potential clients, and I make it a habit of personally alerting them when I give their names to a new prospect.

Writing the PSA

The PSA is generally two pages. The exact wording depends on the job, but most PSAs include the following:

Client and project details. The document should list the location and size of the home (a three-bedroom ranch on three acres at such and such address) and the names of other professionals working on the project, such as the architect and the interior designer.

Company details. This is the usual stuff: your company name, address, email, and phone number, along with license number,

insurance agent, and policy numbers.

Scope of the PSA. My typical PSA covers the completion of the project plans and specs, along with a detailed cost estimate for the project. If the plans include details outside my scope of work — a fancy pool grotto, for example — the contract specifies that I have no responsibility for that part of the plans.

Other input required. The document identifies what advice or input I will need from other professionals, whether the civil engineer, the architect, or the interior designer. Their fees are in addition to mine.

Fee and payment schedule. I specify a dollar amount for the agreement, along with the hours that amount includes. I also specify an hourly rate to be charged if the work defined by the PSA takes longer. I might estimate a cost of $10,000 for 40 hours of work, then bill excess time at $85 per hour. Having a lower rate for the additional time shows that I'm not gouging the clients, and that it's in my interest to finish within the time estimate.

I usually ask for 25 percent down, with additional payments depending on the length of the contract. If it looks like it will take a month to finish the plans and generate an estimate, I might ask for another 50 percent in two weeks, and the remaining 25 percent at the end of the month.

Other Advantages

Once work starts on the PSA, expect to spend some time interviewing and working with the clients. Completing the plans means you will need to spend time in conversation to find out what they want and don't want in each part of the house. That brings up the ultimate benefit of this process: In addition to qualifying clients, it strengthens our relationship, which in turn tends to eliminate the competition. If they continue to feel comfortable working with me, the construction contract becomes a formality.

This tactic doesn't work just for me. I've presented it at *JLC* Live and other trade shows, and have heard back from attendees who used it with great success. One builder told me he was on the verge of bankruptcy, but got several profitable jobs once he started using a similar process. Potential clients began viewing him with more respect, and that boosted their confidence in his ability to do the job.

__Dennis Dixon__ is a licensed general contractor in Flagstaff, Ariz., and a frequent contributor to JLC.

HYDROGAP™ DRAINABLE HOUSEWRAP

no trapped moisture, no mold, no callbacks, no problem.

That's what you get when you build a better wall with HydroGap Drainable Housewrap. The innovative 1mm spacers create a drainage gap that removes over 100 times more bulk water from a wall versus standard housewraps. HydroGap also offers an ideal combination of strength, water hold-out, and vapor permeability for superior housewrap performance. Faster drainage and better performance means less potential for mold and moisture damage — and less worries for you. So Build Better™ and rest easy with HydroGap Drainable Housewrap from Benjamin Obdyke. For more information, please visit **hydrogap.com** or call **800 523 5261.**

Get to KNOW HydroGap™

HydroGap™ DRAINABLE HOUSEWRAP

BENJAMIN OBDYKE roof & wall products

JLC
The Journal of Light Construction

WE'VE NAILED IT

Introducing the New JLC Website

The team at JLC has been working hard building a whole new online home just for you. With more content and easier navigation, you'll be able to access the information you need to complete your projects efficiently and effectively. Take advantage of our newest features:

- More Feature Articles
- More News
- More Ways to Connect
- More Slide Shows and Videos
- And now the JLC Archive is accessible to subscribers **for free**

We've worked harder so you can work smarter. Our open house has officially begun, so come by to discover what's new at **jlconline.com** today.

hanleywood

Lines Up the Entire Room
The All-in-One Multi-Line Laser

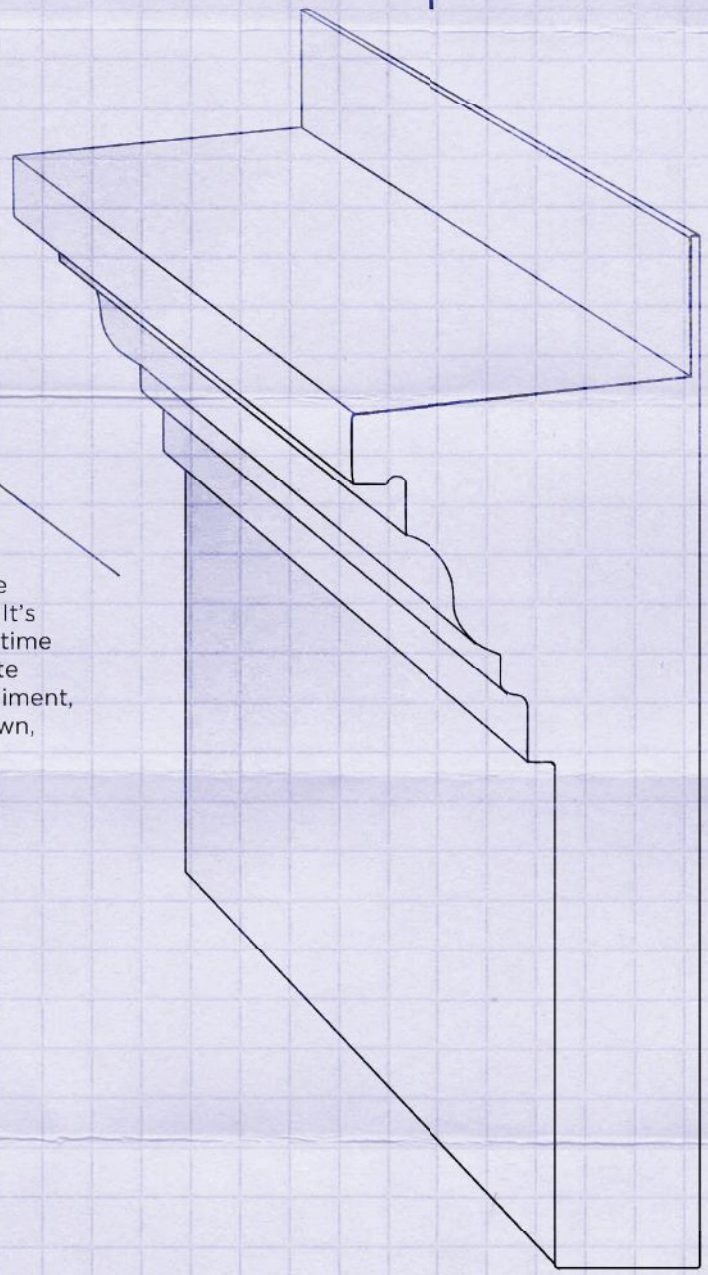
To be the best, you have to use the best. The Bosch GLL3-80 360º Three-Plane Leveling and Alignment Line Laser is the ideal tool for all level, alignment, square and plumb applications. One 360º horizontal plane and two 360º vertical planes makes your job easy – simply set-up once and accurately layout an entire room. Increase productivity with the Bosch GLL3-80.

Visit **www.boschtools.com/jlc** for more information.

BOSCH
Invented for life

CONSIDER THIS DETAIL ALREADY SWEATED.

A TRIMBOARD, RAMS CROWN, AND DRIP EDGE, ALL IN ONE PIECE.



The New Crosshead Pediment — just one of the many AZEK Building Products inspired by you. It's three moulding pieces in one — saving you the time and labor of cutting and installing three separate pieces. To learn more about the Crosshead Pediment, as well as our new Cove Crown, Eight-Inch Crown, and Fluted/Reeded Casing, visit ***AZEK.com***

Designed to last beautifully.™

AZEK® Moulding

Like us on facebook

by Jonathan Tauer

Installing Dense-Pack Cellulose

This economical material both air-seals and insulates

I'm an insulation contractor in western Massachusetts. I specialize in loose-fill, damp-spray, and dense-pack cellulose. I also own a spray-foam truck that I bought a couple of years ago; I was hoping it would increase my efficiency if I no longer had to sub out the limited areas of spray foam that some cellulose projects called for. While I've sprayed quite a bit of foam, I'm now in the process of selling the foam rig. So many variables can affect the quality of the finished product — everything from how the equipment is calibrated to outdoor temperatures — that it's challenging stuff to get right. My crew and I also didn't like dealing with cleanup and were concerned about the possible health effects of working with the chemicals. But I've also found that with the right approach, many problem areas that are commonly spray-foamed — around band

joists, for instance — can be effectively insulated and air-sealed with dense-pack cellulose alone.

Cellulose has a lot of other things going for it. In dollars per unit of R-value, it's hands-down the most efficient insulating material there is. It's also highly fire-resistant and environmentally benign. It doesn't provide the sort of hermetically sealed air barrier you get with foam, but at atmospheric pressure it does stop the movement of air and moisture. We use it wherever we can. For those areas where only spray foam will do, we either use canned one-part foam or call in a local foam sub to spray it for us.

Figure 1. This truck (above) is equipped to install either damp-spray or dense-pack cellulose. The hopper that feeds material to the operator can be filled to the ceiling (right), providing enough material to last from 15 minutes to an hour, depending on the application.

Loose-Fill vs. Damp-Spray

The key piece of equipment needed to install cellulose is a box truck equipped with a powerful blower that mixes the fiber with air and distributes it through a hose that's typically 3 inches in diameter where it exits the truck. My company has two trucks, one of which is equipped with a large vacuum cleaner and a water tank for working with spray cellulose. We also have a van we use for doing prep work. Between the two trucks, we can blow more than 500 bags of insulation a day when everything is going well.

Cellulose comes in compact 30-pound bags. To prepare it for use, the material is unwrapped and tossed into a hopper in the back of the truck, where rotating paddles break it up from beneath. An auger feeds the finely shredded material to the blower (**see Figure 1**).

Loose-fill. Attics are most often insulated with loose-fill cellulose, which is blown directly onto the horizontal surface and built up evenly to the specified depth. This is about as straightforward as it gets, but there are a couple of points to keep in mind. First, depending on how it's blown, loose-fill cellulose can settle 10 percent or more, so it's important to compensate by applying a little extra material to begin with. We install attic depth markers every few feet so the building inspector and client can easily see the depth of the settled material. Loose-fill will finish settling within the first few days of installation.

While loose-fill has an R-value of about 3.5 per inch, it has less air-sealing ability than dense-pack does. A common mistake in retrofit applications is to blow cellulose directly onto a ceiling that's riddled with existing air leaks; afterward, it's very unlikely that anyone will go to the effort of finding and sealing those leaks. In retrofit applications, we make sure to air-seal the thermal envelope at the attic floor before applying more insulation. We look for any penetrations like chimneys, bath fans, and vent pipes, as well as interior parti-

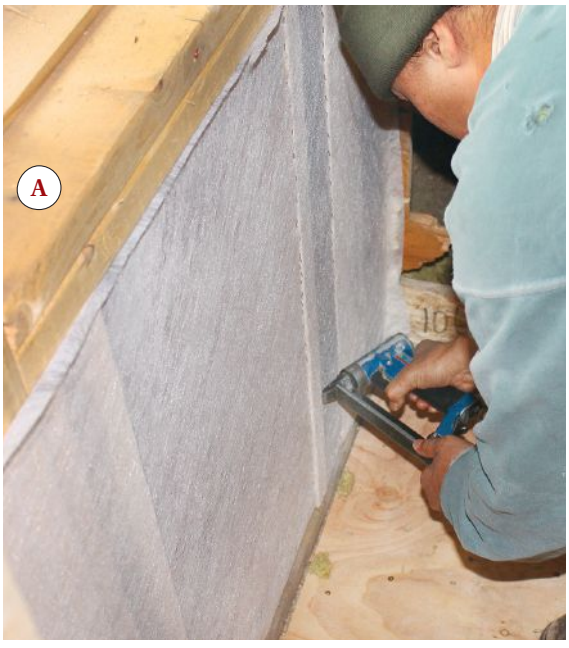
tions or plumbing chases. It's easy to find air leaks when there's existing fiberglass in the attic, because the fiberglass will be stained with dirt filtered from the air that's passed through it over the years. To block larger openings, we use a one-part foam in an applicator gun, along with caulking, flashing, and scrap lumber or drywall. We cover can lights with Tenmat fire-rated light covers, which are easily air-sealed directly to the ceiling (tenmat-us.com). In new construction I always provide a separate line item in the estimate to cover any air-sealing work around rough openings or basement and attic penetrations.

Spray cellulose. Another application method, often called damp-spray, makes use of a fine mist of pressurized water to moisten the dry cellulose as it emerges from the hose. The surface on which it's sprayed is moistened at the same time, and the water causes the cellulose fibers to interlock, creating a bond that's strong enough to permit spraying onto vertical surfaces.

The damp cellulose is ordinarily sprayed to slightly beyond the full depth of the framing; because the material becomes even more strongly bonded as it dries, the excess is shaved off with rotary scrubbers soon after it's applied. As the scrubbed-off cellulose accumulates on the floor, it's vacuumed back into the truck and combined with fresh material for reuse. The adoption of high-pressure pumps has reduced the volume of water used and dramatically speeded drying time. Cellulose manufacturer National Fiber, for example, now provides a 24-hour drying-time warranty.

Like dense-pack, correctly applied spray cellulose is immune to settling. It's also easy to inspect, since any defects or missed areas are easily seen and repaired. It lets you get right down to spraying without a lot of prep work — you just tape plastic over the doors and windows, mask the electrical boxes, and you're ready to go.

The downside of spray cellulose is that



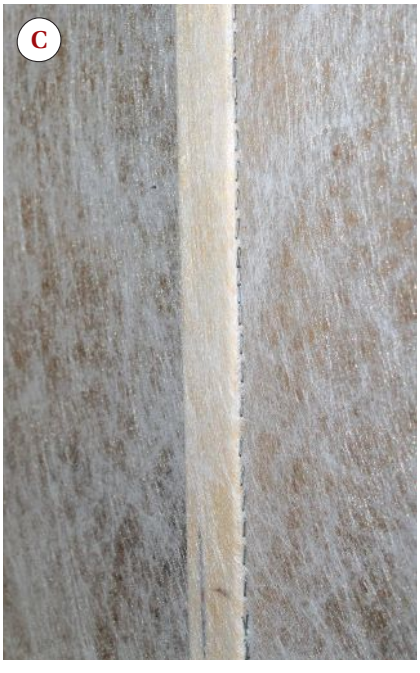


Figure 2. To minimize bulging of the cellulose between framing members, netting is stretched tight and fastened with a pneumatic upholstery stapler (A, B). The closely spaced fasteners are driven at an angle just beyond the outer edges of the faces of framing members. This "inset stapling" helps draw the material taut and prevents the cellulose from pushing beyond the framing (C). The tension of the netting against electrical boxes is enough to prevent them from filling with insulation when the cavities are packed; the netting will later be cut by the drywall crew (D).

it's messy. This isn't a big problem in commercial buildings with wide-open spaces, but on residential jobs you can easily lose more time to cleanup on the back end than you gain in reduced setup at the front end. Scrubbers can be difficult to use effectively in closets and other confined spaces. Areas that can't be scrubbed have to be scraped by hand, and with one person spraying, another scrubbing the overspray, and a third running the vacuum, just staying out of each other's way can be a challenge.

Finally, because the material that gets vacuumed off the floor goes right back on the walls, the site also has to be perfectly clean before you start and stay that way until you're done — no sawdust, wood scraps, bent nails, or other debris allowed.

Figure 3. A skilled installer can snugly fit the netting around joists, collar ties, and other obstructions. As long as the material is tight and securely stapled, small gaps won't leak significant amounts of insulation as the cavities are blown full (right). In complex areas, like the peak of this Queen Anne tower (below), netted dense-pack can be a cost-effective alternative to spray foam.

Dense-Pack Basics

If you force enough loose-fill cellulose into a confined space under enough pressure, you end up with dense-pack — a firm, compact material that can't settle and is very resistant to air infiltration. It can be blown into closed framing cavities — the approach most often used in retrofits — or open ones that have been closed on one side with netting.

The obvious benefit to the closed-cavity method is that you can insulate an existing structure without gutting it first. On the other hand, progress is slowed by the need to seek out and fill every framing cavity, including oddly shaped or unexpected ones tucked behind blocking or diagonal braces. And because cellulose can't be packed into a space any faster than the air can escape, trying to force in too much material in too little time can yield a product that falls short of the required density of 3.5 to 4 pounds per cubic foot, or that bows out existing drywall or plaster.

Some installers will tell you they can dense-pack cavities that contain existing fiberglass, but I find that trying to do this always leaves some voids. When we have to deal with a previously insulated wall, we'll remove a 2-foot strip of drywall at the bottom or a strip of sheathing on the outside, pull out and discard the batts, then net the opening before blowing the empty cavities.

In new construction and gut retrofits, our preferred approach is to fasten netting over the entire frame and blow the cellulose behind the netting. Like damp-spray, this offers complete quality control, since the packed material can easily be seen and felt after installation. The permeable netting gives the air in the cavities an easy route of escape, making it possible to fill the cavities quickly.

Netting the Frame

Cellulose netting is a tough, lightweight, nonwoven fabric. It comes in long rolls of varying widths, and is fastened to the framing with staples. We use pneumatic upholstery staplers for this, which fire off staples at high speed for as long as the trigger is depressed.

After cutting a sheet of netting, stretching it tight, and tacking it in place, we "stitch" a continuous line of staples along each side of the framing members to prevent the insulation from forcing its way between the netting and the face of the framing and interfering with the drywall (**Figure 2, page 43**). This takes practice, because the spacing of the fasteners depends on how quickly the operator moves the stapler — too slow, and they'll be so close together that they'll create a line of weakness in the netting; too fast, and the spacing may be wide enough to allow some cellulose to leak between staples onto the face of the stud.

Open expanses of wall can be netted fairly quickly, but the work slows down when cathedral ceilings, collar ties, dormers, and other irregular areas are involved (**Figure 3**). On most jobs, it will take about twice as many man-hours to install the netting as it will to blow the cavities.

Blowing Wall Cavities

For most applications, the 3-inch hose from the truck is stepped down to 2 inches at the business end. Hoses as small as $1\frac{1}{4}$ inch can be used for narrow cavities (tighter cavities are filled with low-expanding one-part spray foam). The operator makes a small slit in the netting just big enough to provide an entry point for the sharply angled tip of the hose, which he pushes to the bottom of the cavity (**Figure 4**). A control box on a lanyard around the operator's neck contains a combination switch that operates the blower and the cellulose feed mechanism. When both are turned on, cellulose quickly begins flowing into the netted cavity.

Figure 4. Wall cavities are filled first from the bottom to the midpoint of the wall (A), then from the top back to the middle (B). After a cavity is filled, the operator uses a remote control (C) to momentarily turn off the blower, then quickly inserts the hose into the next cavity before switching it on again.

Figure 5. Filled cavities are compacted with an aluminum roller to avoid bulging drywall. A quick pass of the hand is enough to confirm that the insulation lies flush with the framing.

Figure 6. When filling rafter cavities, the usual insertion point is just above the top plate (above). The natural curvature of the longer hose required tends to direct the flow of insulation to one side of the cavity, so filling it uniformly requires a second pass with the curve facing the other way. The hose is visible behind the netting in the photo at right.

Judging when the correct density is reached is a matter of feel and isn't easy to describe, but if the pressure on the blower is set correctly, the flow of material begins to slow and the sound will change, alerting the operator to begin withdrawing the hose while keeping the cellulose flowing. Once the cavity has been halfway filled and the end of the hose is just inside the insertion hole, it's redirected upward, shoved to the top of the cavity, and then withdrawn as it fills from the top back to the middle.

When the cavity has been packed full all the way to the insertion point, the operator shuts off the blower, shoves the hose into the next cavity over, and repeats the process. There's no need to plug the entry holes in the netting; properly installed dense-pack is so compact it won't fall out on its own even if the netting is removed.

All of that happens fast, practically in one continuous motion. It has to, because if the hose is left in one place too long, the material inside it will begin to back up and bind together. An inexperienced or careless operator can pack the hose full all the way back to the truck, creating a mess that may take hours to clear.

You can tell when a cavity has been filled to the right density by feeling it through the netting with the palm of your hand. It should be solid but have some give to it, somewhat like a firm mattress. If everything has been done right, the netting shouldn't bulge noticeably beyond the framing. But some bulging is unavoidable, so each cavity has to be rolled flat with a heavy aluminum roller — a task we jokingly describe as the company fitness plan (**Figure 5, previous page**). A couple of quick passes up and down is usually all that's needed, but it adds up when you're talking about a whole house, especially if there are sloped or flat ceilings to deal with.

Rolling may seem like an afterthought, but it's something we take seriously. The one guy who can really hurt my business is the sub who comes on the job after I

leave. If the drywallers complain to the GC about having to flatten the insulation themselves, it makes us look bad. Worse, if they ignore slight bulges and just hang the drywall over them, the pressure exerted by the cellulose will eventually cause the fasteners to pop through the paper facing, especially with ½-inch-drywall. That makes us, the drywall crew, and the GC all look bad. Taking the time to roll the cellulose really flat saves trouble all around.

Working Overhead

Blowing a cathedral ceiling is similar to working on a tall wall, except that there's usually no way to start in the middle of the bay. The nozzle ordinarily goes in just above the plate and is pushed all the way to the peak, with work proceeding from the top down. If there's no ridge board at the peak, we'll push the nozzle high enough to let us blow material over the top and down the other side. This will fill the cavity most of the way, but we will still need to come into it again from the other side to "touch up" the density to the right level.

When the rafters are spaced 24 inches or more on-center, we make two passes along each cavity, because the natural curvature of the hose causes it to flop to one side, depositing more material there than on the back side of the curve. Once the hose has been withdrawn the length of that side, we twist it so the curve faces the other way and push it back to the peak, then pack the cavity to its final density (**Figure 6**).

Figure 7. A strip of netting between a top-plate nailer and the facing joist makes it possible to dense-pack this area of the band joist (top). Netting stapled between the joist ends is filled with cellulose to form insulating and air-sealing "pillows" (above).

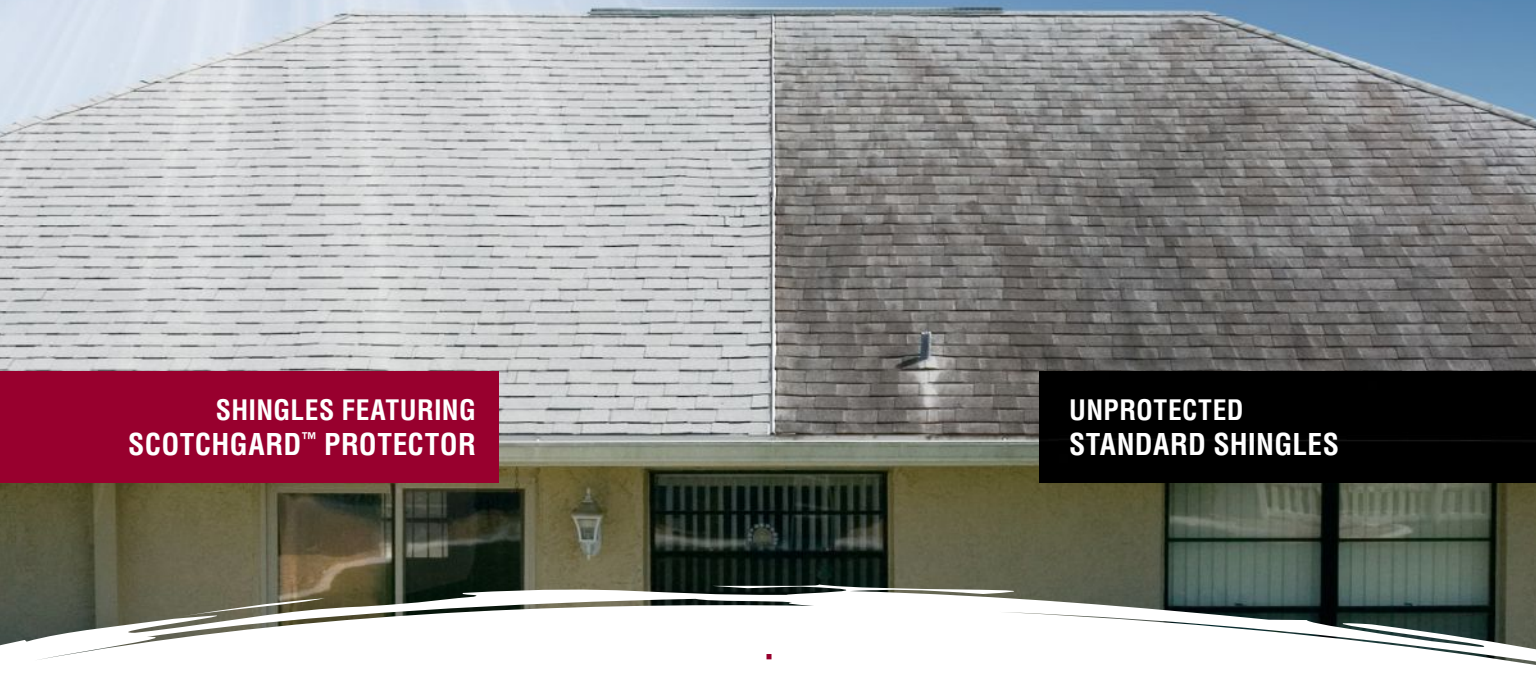
It's generally cheaper to insulate a ceiling with loose-fill than it is to dense-pack it, but overhead rafter cavities are sometimes insulated for soundproofing, or if an attic will be floored to provide storage space. Gravity makes it more likely that the insulation will bulge beyond the framing in the ceiling, but it's difficult to use the roller overhead. To avoid putting any pressure on the ceiling drywall, we have the builder strap the ceiling after we've stapled netting to the undersides of the joists, but before we blow the cavities. That restrains the cellulose and ensures that any bulges that do form won't push out against the drywall.

Another benefit of dense-packing the ceiling is that it insulates and helps air-seal the band joist area at the same time. Even if we're not going to do the entire ceiling, we'll usually net and fill between the two outermost joists that run parallel to an outside wall (**Figure 7**). To insulate and air-seal the spaces between the joist ends, we'll often create "pillows" of material by folding and stapling netting into place before filling it with dense-pack. This requires some time-consuming origami, but it lets us do this part of the job on our own schedule with materials we already have available. It often means that we don't have to bring in a foam sub at all, which saves time and money in the end.

Jonathan Tauer *owns Cellu-Spray Insulation in Florence, Mass.*

ATLAS® ROOFING CORPORATION

Easiest Decision Of A **Lifetime**



You Can't Install A Job You Don't Get

Get the competitive EDGE, and GET THE JOB

Get Leads. Get Tools. Get Busy.

ATLAS SHINGLES

Featuring SCOTCHGARD™ PROTECTOR 3M

Offer your customers the **ONLY LIFETIME** shingles available with a **LIFETIME** warranty against algae streaks and stains.

Contact Your Local Distributor,
Or Sign Up For Your Free Account At:

www.ATLASSIGNATURESELECT.com
www.ATLASROOFING.com

ATLAS® ROOFING CORPORATION

Go to http://jlc.hotims.com for more info

ONE SEAMLESS BOX

Norbord

GO VERTICAL WITH TALLWALL WALL SHEATHING

We need to build smarter homes. Stronger homes. Better homes. By using TallWall 4×9 and 4×10 panels and installing them vertically, you'll do just that. A 38% increase in wall strength. A 60% reduction in wall air-leakage. Significant reductions in labor, material and waste. Who knew OSB could do so much? Build energy efficiency into every house – with TallWall Wall Sheathing.

NORBORD.COM/TALLWALL

Go to http://jlc.hotims.com for more info

Still painting a door with a brush?

I'd hide too!

If you're still painting using a traditional brush or roller – there ***is*** a better way…

AIRLESS

Once you go airless you'll *never* go back.

AIRLESS SPRAYING IS UP TO ***10 TIMES FASTER*** THAN BRUSHING OR ROLLING

Why create more work for yourself? Do more in less time and get a quality finish with Graco's TrueCoat Pro II handheld airless paint sprayers.

Small projects, like doors and trim, can be done up to ***10 times faster*** than brushing or rolling and you get a beautiful smooth finish.

Now stop hiding and put down the brush and roller! Once you experience the time savings and finish quality of a TrueCoat Pro II handheld airless sprayer, you'll never want to tackle another painting project without it.

BENEFITS:

- **Fast** – Do more in less time
- **Professional Quality Finish** – Smooth uniform coverage
- **Easy to Use** – Ready to paint in minutes
- **Easy to Clean** – Ready for your next project

TrueCoat Pro II Cordless
Model #16N657

MADE IN U.S.A. WITH GLOBAL COMPONENTS

To learn more about the TrueCoat Pro II Sprayer and Accessories visit
graco.com/truecoatproII

GRACO

Go to http://jlc.hotims.com for more info

by Greg DiBernardo

Working With Helical Piers

Steel piles are an affordable foundation option for small jobs and tricky sites

My deck company builds about 50 projects a year. That's a lot of footings, especially when you hate digging footing holes and mixing up concrete as much as I do. Since I began building with helical piers, I've stopped wearing out shovels and posthole diggers. I no longer worry about the inspector arriving on schedule to look at my footing holes — or about watching them fill up with water if he doesn't. And once a pier is installed, I know exactly how much weight it can support.

Steel Foundation

A helical pier is a manufactured steel foundation pin that is driven into the soil to a depth below frostline using hydraulic machinery (**see Figure 1, next page**). Helical piers are primarily used in heavy commercial work, but they're also well-suited for backyard decks, additions, and foundation repairs.

Two years ago, I bought a franchise with Techno Metal Post (see "Dealership" sidebar, page 54). Now a big part of my business volume comes from installing piers for other contractors. Most helical piers are driven with a skid-steer or excavator, but Techno Metal Post uses a proprietary

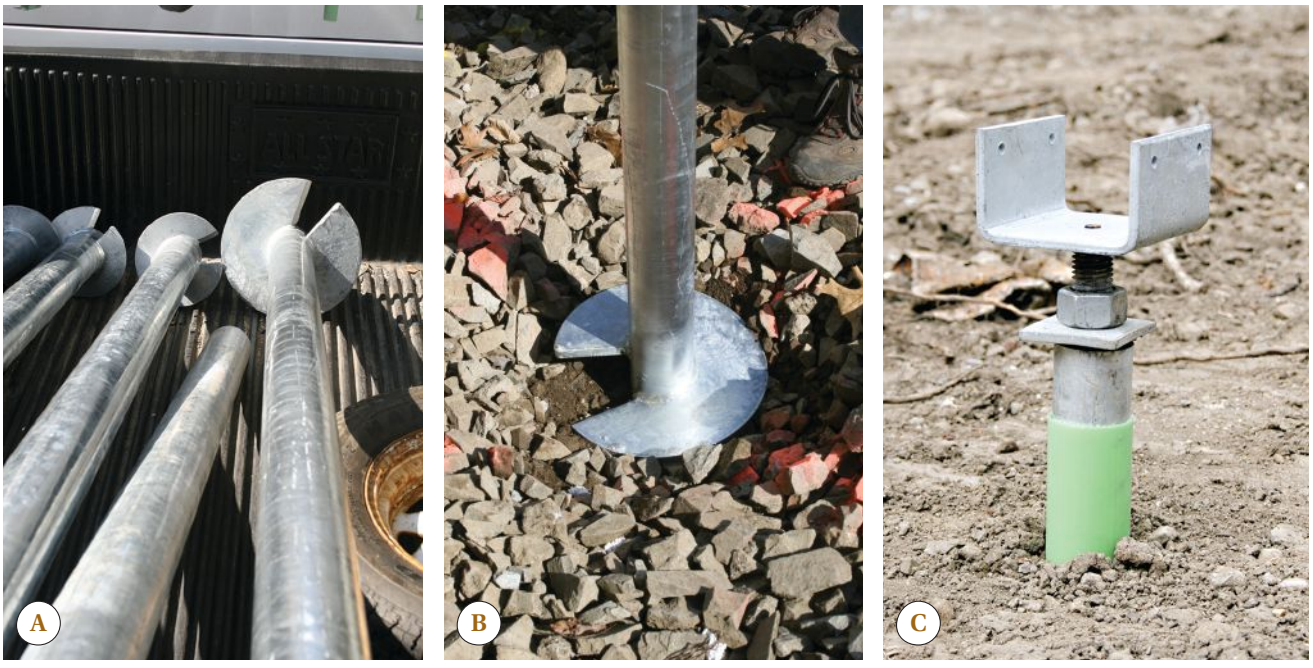


Figure 1. Helical piers have a screw-shaped plate welded to a zinc-coated steel shaft, and are made in different sizes for different soils and applications (A). As the driver turns the pile, it simply screws into the ground until the installer is confident it's below the frostline and in soil with sufficient bearing capacity (B). Several types of caps are available to attach piers to framing; some are adjustable in order to fine-tune the elevation (C).

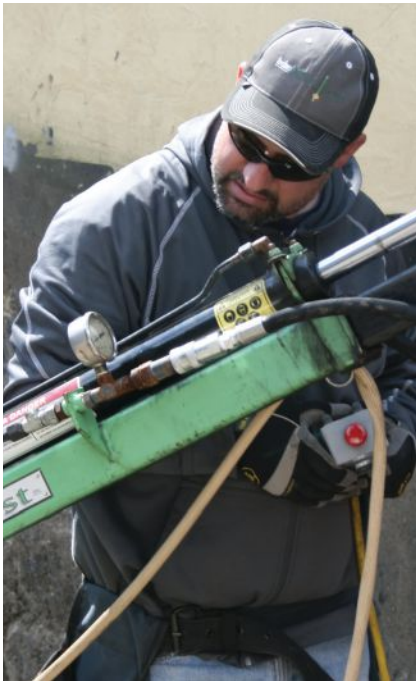


Figure 2. A pier's bearing capacity usually relates to the torque required to drive it. A gauge on the machine measures the hydraulic pressure, which correlates to the torque.

machine that's small enough to fit through a gate and go places larger machines can't. I can actually drive the rig right onto an existing deck if I need to retrofit additional footings to support a new hot tub.

Typical piers have a 7-foot shaft with a helical bearing plate welded to the end and a cap on top that attaches to the framing. Most piers intended for residential use are hot-dipped galvanized steel. If the soil is particularly corrosive, sacrificial anodes (similar to those used to protect underground LPG tanks) can be added. In most commercial and industrial applications, however, the piers aren't even galvanized.

The diameter of the helix varies based on soil conditions. Generally, the installer selects a smaller helix for rocky soils and a larger one for marshy and clay soils. Once the pier is set, a variety of caps are available to tie the pier to the framing; some of them have a screw assembly that allows fine-tuning of the elevation.

Bearing Capacity

The load-bearing capacity of a helical pier usually relates to the amount of torque required to install it, a function of both the size of the helix and the soil's bearing capacity. A pressure gauge on the installation machine reads the torque as the pier is rotated into the ground (**Figure 2**).

In weaker soil, the pier will be driven deeper to reach stronger soil. (If greater bearing or uplift capacity is required at shallower depths, the project engineer may specify multi-helix piers.) When the helix is below frostline and the pressure gauge hits a high enough number relative to the loading requirements of the structure, the installation is complete. To calculate the actual bearing capacity of the pier, the pressure reading is plugged into a formula called a torque correlation.

When poor soil conditions mandate going deeper than the standard 7-foot-long shaft, we weld on an extension (**Figure 3**). Sometimes all it takes is a foot more depth to go from terrible soil to firm material. This is particularly relevant if we're building a freestanding deck where the piers close to the house might start out in backfill. If we were excavating to install a conventional concrete footing, we'd have to dig

Figure 3. Shaft extensions are welded on and the pier driven as deep as needed to reach soil with adequate bearing capacity (A). The pier can be steered around a below-grade rock by moving the driver's boom; once the obstruction is passed, the boom pulls the shaft plumb again (B). Even though this pier penetrates about 13 feet into the ground, there's no pile of excavated soil as there would be with a conventional footing (C).

down to virgin ground at the house foundation level — as much as 7 feet or 8 feet if the house had a basement. It's far easier to drive a helical pier to this depth.

Also, with a traditional footing, you never really know what lurks an inch below the bottom of your footing excavation. Now that I am in the helical-pier business, I frequently see situations where seemingly good soil turns to mush inches below where I typically would have installed the footing.

Rocks. Normally, we just power through loose rock basketball-size and smaller. The installation machine generates sufficient torque for the helix to push rocks out of the way as it turns. Sometimes, the installer can actually steer the helix around a rock, then use the machine's boom to pull the pier back into plumb.

If we hit a large rock below frostline, the pile is parked on top of the rock and load-tested (see "Load-Testing" sidebar, right). Assuming it passes the load test — it usually does — we can be confident the pier will never move. If it doesn't pass the load test, the pier will have to be installed in a

Load-Testing a Pile

Load-testing a helical pile is far simpler than it sounds. The height of the pile above grade is measured (top photo, right). Next, a cap is inserted into the pile to protect its top. This cap is slammed five times with a sledgehammer (bottom photo, right), and the pile's height is measured again. The sledge's weight is specific to the size of the pile — a heavier hammer is used with bigger piles. The amount that the pile sinks indicates the soil bearing capacity, which an engineer will verify. The dynamic loading imposed by an impact load is surprisingly large and correlates to the static load a pile can handle.

Load-testing (instead of taking a torque reading) is used in several circumstances — such as when the pile bottoms out on a large rock or the soil is particularly slippery. With wet clay, for instance, the bearing capacity may be higher than torque readings would suggest because the soil is lubricating the helix and reducing the force required to turn it.

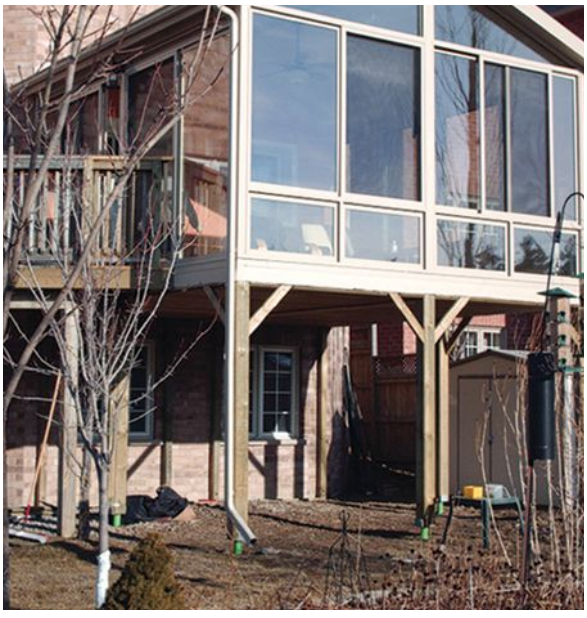


Figure 4. Above is a typical deck foundation using helical piers, which have greater bearing capacity than concrete piers and install with little disturbance to the landscape. At right, treated posts supporting a porch have been fastened to connector caps on the helical piers.

Is a Helical Pile Dealership Right for You?

After discovering how useful helical piers were in my own deck-building and construction businesses, I realized other contractors in my area would probably love to use them, too. Residential helical piles are still not readily available around here, so I saw a huge market opportunity.

There are many helical-pile companies that specialize in commercial work, but they usually avoid smaller projects, partly because their hydraulic equipment (typically mini-excavators and larger machines) don't fit easily into tight places and tend to trample the landscape. There were several helical pile brands I could have affiliated with, but Techno Metal Post was the only company I found whose proprietary installation machines are portable enough and left a light-enough footprint for me to use on residential projects.

Because I was already running my own contracting businesses, I knew I would need some help getting a dealership off the ground. I found two partners with complementary skills, and together we went through the process of setting up in northern New Jersey. The startup costs included purchase of a protected dealership territory, an installation machine, a dedicated truck, hand and power tools, and a variety of incidentals we need for field operations. We also purchased about $10,000 of initial pile inventory so we could hit the ground running with a variety of sizes and types. We earmarked additional funds for advertising — we knew we'd essentially have to create a market, since no one in our area was likely to have used helical piles.

Given our experience, I'd say the minimum needed to start a dealership is about $50,000, though having more cash on hand would certainly not be a bad idea. Rather than requiring a single large buy-in at inception, Techno Metal Post charges its dealerships a small annual territory fee, which makes it easier to get started. The company does not offer financing.

different spot. On critical jobs, a soil test has often been done before we get there so we'll know where there's ledge or bedrock.

When we encounter a large rock above frostline, it can be drilled and the pier's shaft pinned to the rock. Occasionally, however, there is so much rock on the job helical piers just won't work. There are some locations where I don't even bother trying to install them because every lot on the street was blasted out of bedrock.

In average soil, driving a helical pier takes about 10 minutes, after which it's ready to build on. A P2 pier with a $2\frac{5}{8}$-inch-diameter shaft — the smallest pier I install — will support a 6,800-pound load. A concrete pier would need to be bigger than 16 inches in diameter in verified 4,000-psi soil to achieve the same capacity. Because of the higher bearing capacity, most projects require fewer piers, although larger beams may be needed for the greater spans.

Engineered Support

For small jobs, we can usually specify the right size helical piers based on the loading of the structure, though a Techno Post engineer is always available for design help. On additions and other large jobs, the architect or engineer typically provides the pier specs.

During the installation, we record pressure readings, pier depth, and load-test

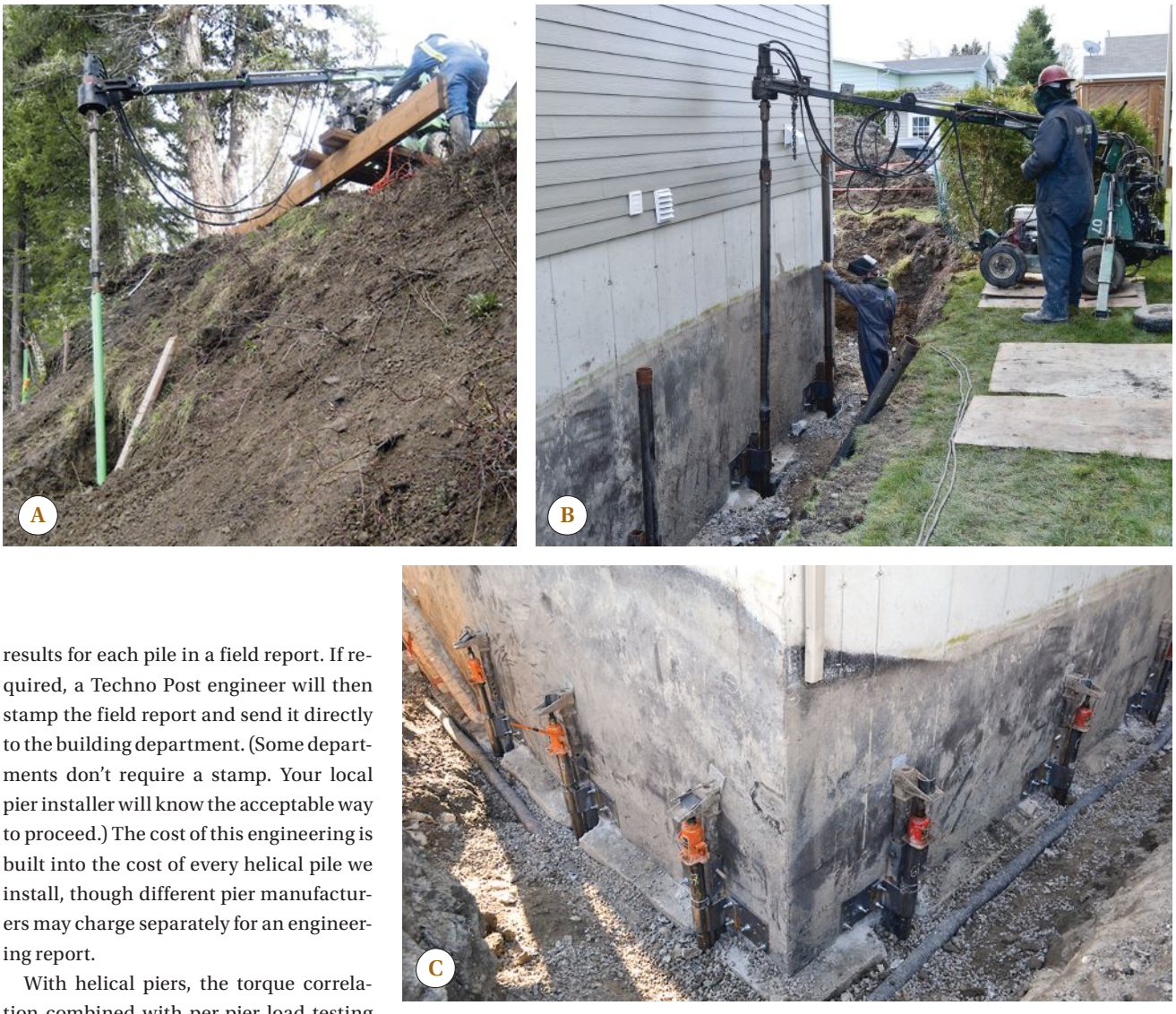


Figure 5. Adding a vertical extension to the drilling rig makes it possible to drive piers into steeply sloped sites (A). The machine is also well-suited to foundation stabilization work, as it can fit in tight spaces around existing homes (B). Piers are typically installed every 6 feet along an underpinned foundation (C).

results for each pile in a field report. If required, a Techno Post engineer will then stamp the field report and send it directly to the building department. (Some departments don't require a stamp. Your local pier installer will know the acceptable way to proceed.) The cost of this engineering is built into the cost of every helical pile we install, though different pier manufacturers may charge separately for an engineering report.

With helical piers, the torque correlation combined with per-pier load testing also means there is no need to test the soil capacity or rely on guessing. Once the pier is installed, you will absolutely know its bearing capacity.

You may experience some pushback from your local building official the first time you propose helical piers. Chances are he or she has little or no experience with them, so you may have to provide supporting documentation along with your construction drawings. Ask your installer for this documentation to submit with your plans. Generally, most officials just need to understand how a helical pier works, but some can make life difficult. My experience is that once they see the finished product along with a stamped field report, they not only accept helical piers, they recommend them to other contractors.

Applications

Helical piers can be substituted for traditional concrete piers on most additions (**Figure 4**). If the addition is close to grade, we bolt support beams directly to brackets welded to the piers, but for taller structures, we may use treated posts on top of the piers to reach horizontal beams.

Difficult terrain. When getting the machine to the base of an incline turns out to be nearly impossible, we try to install the foundation from above. Often, we can anchor the machine at the top of a cliff or incline and put an extension on it to get the drive head over the installation location. This is a tricky install that requires skill and experience, so our customers can expect to pay a premium for it (**Figure 5**). Even so, helical piers are faster and cleaner than nearly any other method and may be the only way to get a foundation installed on difficult sites.

Underpinning. It is not uncommon for an existing structure's footing to be too small to carry the additional loads of a second- or third-story addition. Or sometimes the foundation may be sinking because it was installed in poor soils. Either way,

Figure 6. The author's small rig excels at going places larger pile-driving equipment can't (A, B, C). When the machine won't fit into a tight area, the drive head can be mounted on a portable bracket that bolts to the structure (D).

helical piers are a great alternative to traditional underpinning using concrete, because they can be installed much more quickly and cleanly.

Usually we start by excavating from the outside to expose the foundation footings, though we can sometimes also work from inside the structure. We bolt brackets to the foundation and drive the piers through them. After the structure is either stabilized or lifted as required, the piers and brackets are welded together, and backfilling can begin. With good site conditions, we can install four or five underpinning piers a day with a two-man crew.

Structural deficiencies. Our installing machine weighs less than 1,000 pounds and can fit through a 32-inch-wide doorway, so it can be driven and operated even in basements if the access is right. When we can't get the whole machine inside, we can remove the drive head and use a special mount that gets us into even tighter spaces (**Figure 6**). This allows us to quickly add a new pier under an existing beam or replace a failed footing. In spaces with tight overhead conditions, we'll use piers with shorter shafts and add extensions as the pier goes into the ground.

Poor soils. Installing a traditional foundation on a lot with poor soils can be expensive; it usually takes a lot of excavation and lots of compacted fill. And even then massive spread footings may still be needed. But when helical piers are included in the foundation design, you can usually eliminate extra excavation and concrete. In such cases, the foundation is typically excavated to standard depth, and then we install helical piers in the centerline of the footing form at specified intervals down to good soil or bedrock. Before the concrete is placed, the pier caps are tied into the rebar of the traditional footing.

Costs

While installed costs will vary regionally and with the size and depth of the pier, our typical residential helical pier costs $150 to $250 installed. This includes pier, installation, engineering, and a cap bracket to connect the pier to the structure. (That's less than it costs me to install a concrete footing after factoring in all my labor and material costs.) The price for underpinning depends on factors like depth and the quality of the footing we are connecting to, but averages around $1,800 per pier, not including excavation and backfill.

Greg DiBernardo *owns Bergen Decks in Waldwick, N.J., and is a partner in Techno Metal Post of Northern New Jersey. Photos are courtesy of the author and Techno Metal Post.*

CAN YOU SPOT THE VENT FAN?

When it comes to innovative ventilation technology, Panasonic continues to light the way. Our powerful, energy-efficient fans are renowned for working quietly behind the scenes but our revolutionary WhisperRecessed™ model is putting a spotlight on design. WhisperRecessed™ features a powerful, 80 CFM fan hidden behind an elegant recessed light and is the industry's only ENERGY STAR® qualified recessed fan/light. The result? Clean air, clean design and a cleaner environment.

At Panasonic, ventilation's never looked so good. Just another way we're engineering a better world for you.
Spot it at www.panasonic.com/ventfans.

Go to http://jlc.hotims.com for more info

eco ideas

ENERGY STAR AWARD 2012
SUSTAINED EXCELLENCE

WhisperRecessed™ VENTILATION FAN

Panasonic
ideas for life

POINT. CLICK. TOUR. REMODEL.

Take the tour at homeforlife2012.com

Aging-in-place remodeling is the next business boom. 80 million baby boomers are reaching the age of 65 with more choosing to stay in their homes rather than buy new. Build your business, as well as serve your customers, with aging-in-place solutions to help them adapt their home for retirement. Remodeling's Home For Life online tour transforms a classic suburban family home into a convenient, energy-efficient, and low-maintenance home.

Take the virtual tour and you'll see

- Before-and-after floor plans
- Designs for better use of space
- Insights from experts
- Innovative products and technology

The online tour is open 24/7—check it out at **homeforlife2012.com**.

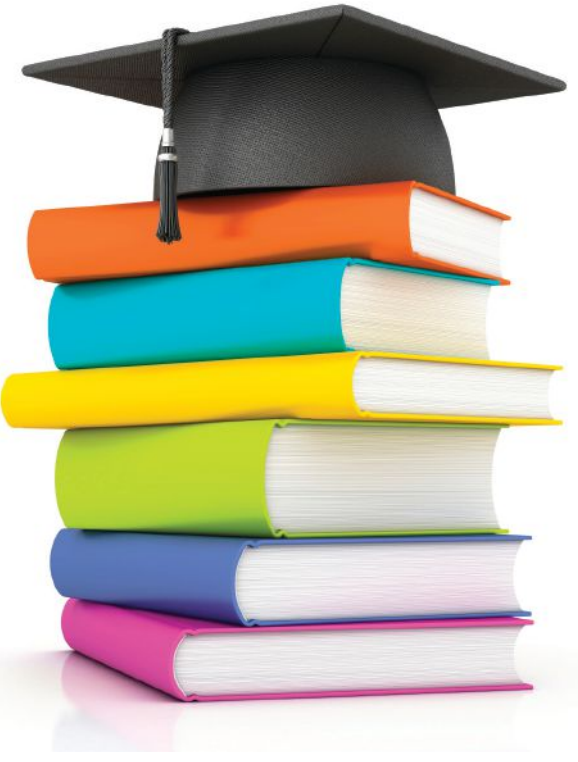
Register to win a new Apple® iPad® when you take the virtual tour.

remodeling Home for LIFE hanley wood

Sponsored by:

KOHLER Generators · GRACE · ecolife · KLEER TRIMBOARD · DAP THE SPEC LINE · SIMONTON · The Tapco Group · ThyssenKrupp · USG · Sherwin-Williams · TEJAS · Owens Corning · Raindrop · The Genuine. The Original. Overhead Door · STERLING · ProVia · Panasonic · Rinnai · SCHLAGE · Waypoint · DOW · LUMBER LIQUIDATORS

Solutions are here.



Feed your thirst for knowledge. From techniques to trends, we're proud to be a partner for best practices and deeper insight. With continuing education courses, in-booth demonstrations and a wealth of how-to videos, we're passionate about contractor education. We also drive knowledge with the touring Tapco Group vans and the new Resource Corner website, **www.TapcoGroupRC.com**. From better products to better insight, we love providing smarter solutions.

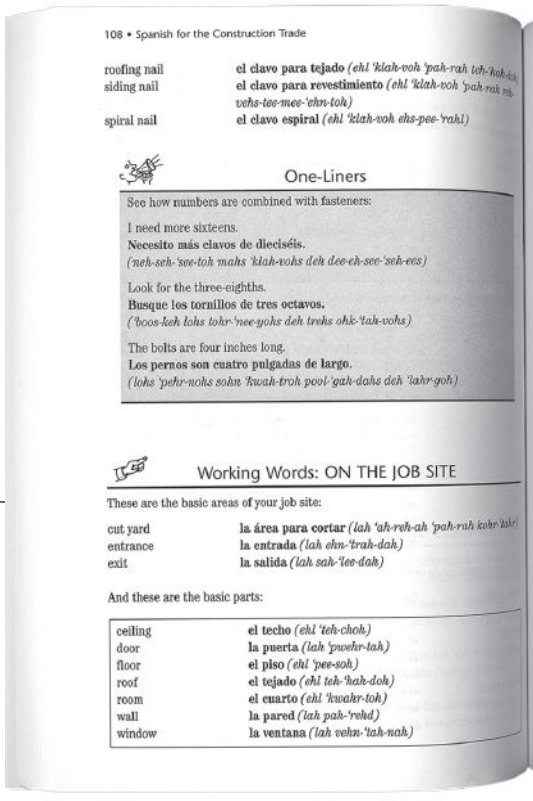
The Tapco® GROUP
A HEADWATERS COMPANY

Roofing ◆ Siding ◆ Shutters ◆ Siding Components ◆ Tool Systems ◆ Egress Systems

www.TapcoSolutions.com

Thirsty for more? Get contractors' thoughts on their Tapco solutions.

Breaking Through the Language Barrier



108 • Spanish for the Construction Trade

roofing nail	**el clavo para tejado** *(ehl 'klah-voh 'pah-rah teh-'hah-doh)*
siding nail	**el clavo para revestimiento** *(ehl 'klah-voh 'pah-rah reh-vehs-tee-mee-'ehn-toh)*
spiral nail	**el clavo espiral** *(ehl 'klah-voh ehs-pee-'rahl)*

One-Liners

See how numbers are combined with fasteners:

I need more sixteens.
Necesito más clavos de dieciséis.
(neh-seh-'see-toh mahs 'klah-vohs deh dee-eh-see-'seh-ees)

Look for the three-eighths.
Busque los tornillos de tres octavos.
('boos-keh lohs tohr-'nee-yohs deh trehs ohk-'tah-vohs)

The bolts are four inches long.
Los pernos son cuatro pulgadas de largo.
(lohs 'pehr-nohs sohn 'kwah-troh pool-'gah-dahs deh 'lahr-goh)

Working Words: ON THE JOB SITE

These are the basic areas of your job site:

cut yard	**la área para cortar** *(lah 'ah-reh-ah 'pah-rah kohr-'tahr)*
entrance	**la entrada** *(lah ehn-'trah-dah)*
exit	**la salida** *(lah sah-'lee-dah)*

And these are the basic parts:

ceiling	**el techo** *(ehl 'teh-choh)*
door	**la puerta** *(lah 'pwehr-tah)*
floor	**el piso** *(ehl 'pee-soh)*
roof	**el tejado** *(ehl teh-'hah-doh)*
room	**el cuarto** *(ehl 'kwahr-toh)*
wall	**la pared** *(lah pah-'rehd)*
window	**la ventana** *(lah vehn-'tah-nah)*

It's not exactly breaking news that the demographics of the labor force have changed drastically in parts of the U.S. Here along the Gulf Shore of Texas, I watched for years as job-site communication problems became more common. Increasingly, it began to look like learning Spanish was unavoidable. Though I could think of a few things I'd rather do with my time than learn a foreign language, I saw a couple of reasons to make the commitment.

First, though I'm a carpenter and not a GC, I often provide project management for owners who act as their own contractor. In that capacity, I'm constantly talking with the Spanish-speaking employees of other subcontractors on site. I don't actually direct their work, but I can help keep things moving if a problem or question arises while the owner is off site.

Second, I'm not getting any younger, and the day may come when I'm ready to give up the physical work and hire on with a larger company as a supervisor. In South Texas, even with my construction knowledge, I wouldn't stand much of a chance at landing that job unless I could speak Spanish.

Back in School

My first step was a six-week-long course at San Jacinto Community College. Tuition was $250, and the textbook (*Invitaciones: An Interactive Worktext for Beginning Spanish,* Vista) cost a whopping $105. I figured if I was going to make a $355 investment, I'd better mean it. The teacher warned us the first night that the course would be demanding and there would be only a few of us left at the end — and she was right. But she also promised that if we stuck with it and did the homework, we'd be able to converse in Spanish when we finished. It was definitely an accelerated introduction, with class for three hours every Tuesday and Thursday, reinforced by two to three hours a day of home study.

Being computer-illiterate, I was concerned I might miss out on some important exercises, but in fact this wasn't the case — the text, though it is available with companion CDs, is designed as a traditional workbook. The teacher did a great job covering basic verb conjugations, idioms, and a sprinkling of Hispanic cultural issues, all with a healthy dose of fun.

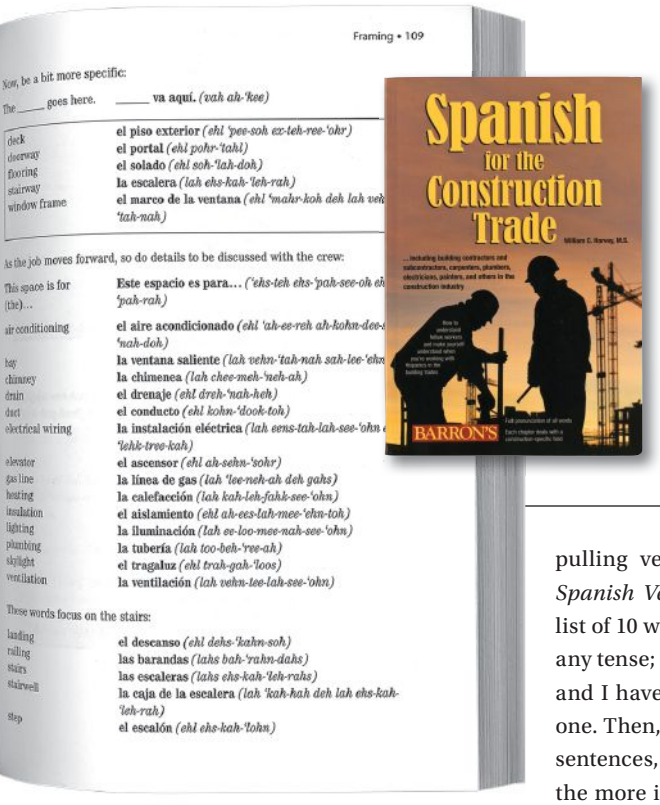
She also encouraged us to expose ourselves to Spanish any way we could. For me, this meant tuning into Spanish radio stations all day when I worked in my shop. On site, I did the same with my radio-receiver ear protectors. I'll never forget the day when — without having to think about it — I understood a complete sentence spoken by the announcer. "I can do this!" I remember thinking.

Just as the teacher had warned, the pace of the course was pretty grueling. We had to turn in six to eight pages of workbook exercises every class. I would usually get home around 9 p.m., then stay up a couple of hours to start the assignment while it was still fresh. I also typically studied for an hour or two before work every morning, then did the same every evening after the kids were in bed. I had made the commitment and was in fact very motivated. The odd thing was I had never really liked school; this was one of the few times that learning something showed immediate results.

For Further Reading

The only downside to the course was that the textbook was, not surprisingly, geared toward college activities. So for more job-specific usage, I purchased *Spanish for the Construction Trade* (Barron's). The exhaustive vocabulary sections alone make this an excellent resource for home study and reference on the job. If you can't find it in this book, you'll probably never need to say it at work.

An aspect of the book I don't care for is the universal use of the more formal second person ("usted") instead of the familiar ("tu") form. In our part of the country, and certainly on job sites, the familiar usage is much more common in day-to-day life. Also, I wouldn't mind seeing the glossary translate Spanish to English as well as English to Spanish. But overall, this is a great book; I keep copies in both my truck and my shop.



Going back to school to learn Spanish can pay big dividends in the field

by Mike Shannahan

Continuing Ed

When the course ended last fall, I had no choice but to find other ways to keep learning, and here I got two lucky breaks.

First, I started working on a home owned by a retired Spanish teacher and her husband, two of the nicest people I've ever known. La Profesora has been patient beyond words in helping me through some of the more difficult aspects of learning the Spanish language (can anyone say "compound tenses" or "indirect object pronouns"?). I have continued to have weekly sessions with her. She offered to do this for free, or to swap for work, but I preferred a more formal arrangement. I pay her for one- to two-hour tutorial sessions and I always get more than my money's worth.

The second big break was finding myself working regularly with a bilingual apprentice who is employed by a property maintenance company I do a lot of work for. He is as eager to become a journeyman carpenter as I am to become fluent, so we have a great time together.

Recently I've also enlisted help from one of my daughters, who gives me nightly homework assignments by randomly pulling verb forms from the book *501 Spanish Verbs* (Barron's). She gives me a list of 10 words — they can be any verb in any tense; first, second, or third person — and I have to write a sentence with each one. Then, weekly, my tutor goes over the sentences, corrects them, and explains the more idiomatic ways to express what I was attempting to say.

I'm continually looking for ways to learn more Spanish. I still listen to the radio, and I read *La Semana,* a free weekly regional newspaper. I also read the bilingual version of a local church bulletin and pay attention to every Spanish sign and billboard I see — all efforts to help me think in Spanish, which is key to speaking it well.

Immersion

The efforts I've described so far are a good foundation, but the best part of learning Spanish has been using it with native speakers. I try to never miss an opportunity to do so, which in this part of the country is not difficult. If Texans are known for anything, it's our friendly demeanor, and Latinos tend to raise this to an art form. In the bank, at church, in the lumberyard — you name it — if you can't find someone with whom to speak Spanish around here, you're not trying very hard.

If I'm waiting in line at a store, I'll often turn to the person behind me and ask, "?Hablas español?" If he or she is a native speaker, most likely I'll be greeted with a smile, and we may have a short conversation about something — our families, our jobs, whatever comes up. If the conversation is going too quickly for me to follow, I'll ask the person to speak a little more slowly. Sometimes we end up speaking for several minutes.

You Can Do It

I started learning Spanish last fall. When people see me conversing, they'll ask me how long I've known the language. When I tell them a year, they typically act surprised; I hear that the learning curve is often a little longer. I say this not to brag but to point out that it's possible — even for someone with a checkered academic record.

At this point, I wouldn't say "mission accomplished." I am, however, now able to easily conduct business on site with native speakers, which makes for a more productive and safer job. The increase in the workers' respect for me when I speak to them in their native tongue is palpable. Over the last several months I've also taken on jobs where my communication skills were central. (I increase my standard hourly rate in these situations.)

In the future, if I'm ever in a job trailer interviewing and am asked, "Can you communicate in Spanish?", all I'll have to do is step outside and start a conversation. Learning Spanish is not for everyone, but if you take the initiative you can do it. I won't say it isn't difficult and time-consuming — quite the opposite. But it is also more fun than I ever could have imagined.

***Mike Shannahan** is a master carpenter in La Porte, Texas.*

Milwaukee®

M18 FUEL™

DRIVEN TO OUTPERFORM.™

UP TO 3X LONGER MOTOR LIFE

UP TO 50% MORE RUN-TIME

PROPRIETARY 3-MODE DRIVE CONTROL™

M18 FUEL™ is engineered for the most demanding tradesmen in the world. M18 FUEL™ delivers unrivaled performance in a compact structure and features three Milwaukee®-exclusive innovations - the POWERSTATE™ Brushless Motor, REDLITHIUM™ Battery Pack and REDLINK PLUS™ Intelligence Hardware and Software - that deliver unmatched power, run-time and durability.

Simply put, M18 FUEL™ is best-in-class, full-circle technology that drives, protects and powers your cordless power tools beyond the rest.

BY THE TRADE FOR THE TRADE

Go to http://jlc.hotims.com for more info

http://m.milwaukeetool.com/m/cx

Keeping Water Out of Stucco Walls

by Gene Summy

Assume that the cladding will leak, but make sure the envelope is watertight

Three-coat stucco is the most common exterior cladding here in Southern California; properly installed, it's tough, durable, and attractive. But it's not waterproof. No matter how skilled the plasterer is, rain will get behind stucco.

My inspection business investigates moisture problems for several large builders in the region. Not a week goes by that we aren't water-testing a stucco installation, typically looking for a suspected window leak. What we've learned is that the windows themselves are actually fairly weatherproof; more often than not, it's the building paper and the flashing around the window that leak.

Get the Drainage Plane Right

Once you accept that the stucco itself lets water through, it's easy to understand why the building envelope must be made watertight before the stucco is applied. In my experience, it doesn't really matter whether the walls are covered with housewrap or Grade D 60-minute paper, as long as you use two layers. The first layer — the one against the sheathing — acts as the drainage plane, while the top layer is sacrificial and protects the bottom layer from construction damage. Even when the stucco actually sticks to the top layer, water can still drain out of the assembly.

Figure 1. Shown here (above) is a shutter block that was installed on top of a piece of light-blue self-adhered flashing. Unfortunately, the building paper was then installed on top of the flashing beneath the block, which allowed water to run behind the paper and soak the framing. In the repair (right), the flashing membrane sits on top of the paper below the block.

Water-Testing a Stucco Wall

To find out how water and stucco interact, we built a 20-foot-long wall assembly and installed five windows in it (see photo, below). We used two layers of Jumbo Tex building paper over open-bay framing (no sheathing), and carefully applied the metal lath with furring nails driven by hand into the studs. We then applied three-coat stucco over the course of 10 days, moisture-curing both the scratch and the brown coat. From the back, we cut holes in the building paper to expose the scratch coat.

We set up our custom spray rack to apply water to the entire surface of the wall at once. In less than two minutes we found water flowing through the holes we had cut into the building paper — convincing us of the importance of creating a watertight envelope underneath stucco.

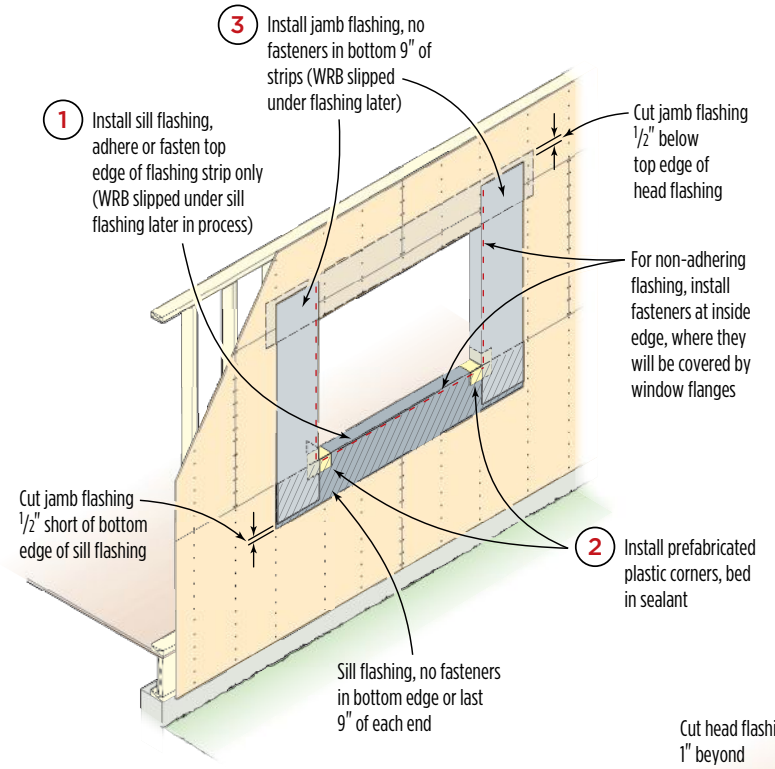
I always recommend 60-minute Grade D building paper as the first layer; when it gets wet, it plumps up, which helps to seal around penetrations from lath fasteners. I prefer Fortifiber's Super Jumbo Tex (800/773-4777, fortifiber.com) because of its consistently reliable quality. Other brands seem to work well too, as long as the paper is actually 60-minute paper. Codes require only that it be Grade D paper, so unless you actually specify 60-minute, you may end up with less-expensive 30-minute or even 10-minute paper.

Regardless of which water-resistive barrier you choose, it's only as good as the installation. I still see builders cover the rough window opening with housewrap, cut an X, then pull the wrap into the opening on all four sides before setting the window. I guarantee this installation will leak. The flap of housewrap above the window must be held up temporarily until the window is installed and flashed, then pulled down over the window flashing and taped into place (**see illustration, facing page**). I also commonly find reverse laps in the building paper, especially under windows and under shutter blocks, which are the pieces of wood nailed up for securing decorative shutters (**see Figure 1**).

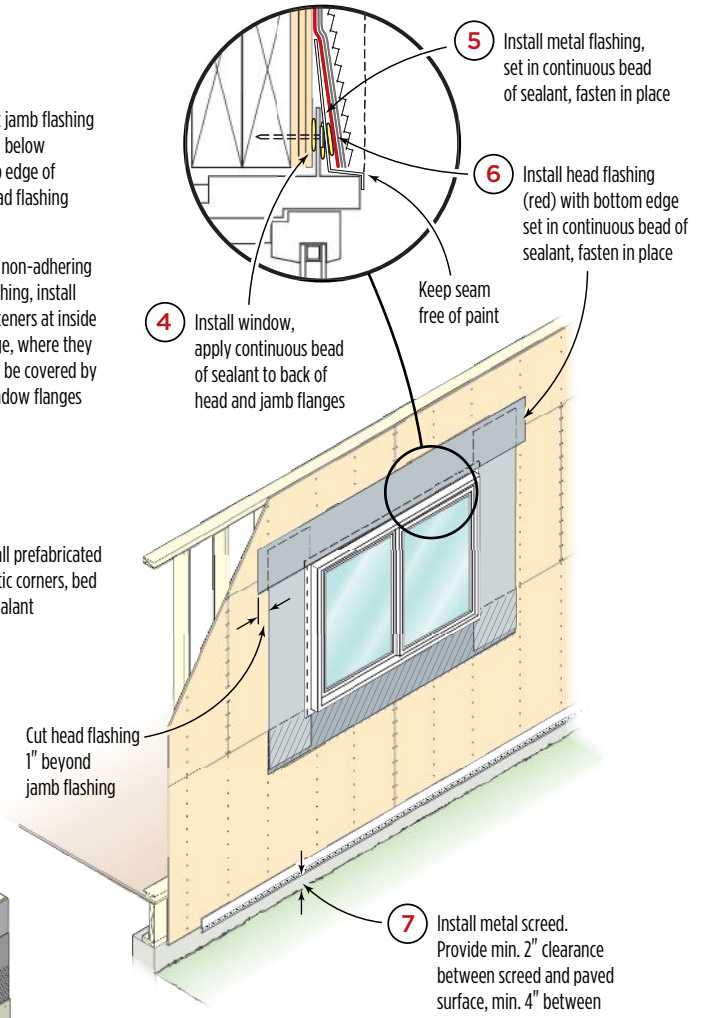
Be sure to follow minimum overlap requirements for the building paper, which by code are 6 inches vertically and

Flashing Details for Stucco Walls

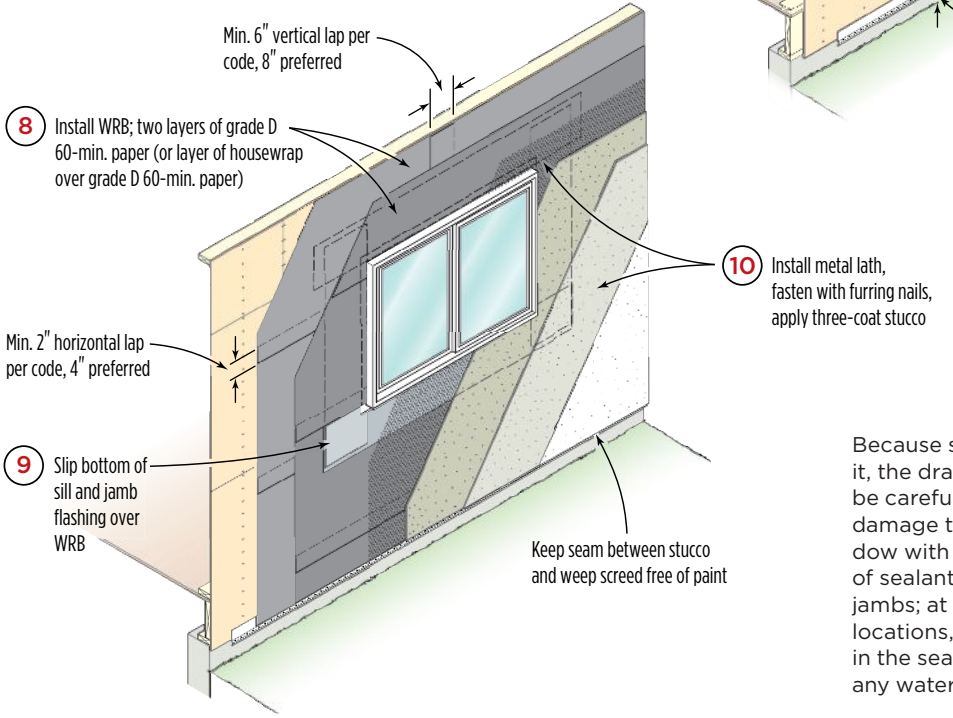
Sill and Jamb Flashing Installation



Window and Head Flashing Installation



WRB and Stucco Installation



Because stucco allows water to pass through it, the drainage plane behind the lath must be carefully detailed to prevent moisture damage to the frame. When installing a window with nailing fins, use continuous beads of sealant behind the fins at the head and jambs; at the sill, apply sealant at fastener locations, but leave minimum 3-inch gaps in the sealant between fasteners to let out any water that leaks in through the window.

Nine Tips for Better Stucco

1. Never measure sand by the shovelful. Shovels aren't uniformly sized, and neither are tradesmen. One guy may throw in 8 pounds of sand with his shovel, while another guy might throw 5 pounds. Instead, make a box to measure out the ingredients — one cubic foot is a good size.
2. Always mix per the manufacturer's instructions.
3. Use clean sand; this makes a big difference in stucco quality.
4. Use premixed stucco. Besides eliminating the risk of a bad mix, you make the supplier at least partly liable if problems develop.
5. Moisture-cure the stucco. The scratch coat should measure 3/8 inch thick, and it should moisture-cure for 48 hours before the brown coat is applied. In dry climates or windy weather, keeping the stucco moist during the curing period may require more frequent wetting.
6. Allow another 48 hours to moisture-cure the brown coat, which should also be 3/8 inch thick (or per the manufacturer's recommendations). Then let it dry-cure for 10 days (even though most manufacturers require only five days). Extra curing time minimizes cracking, which helps reduce water intrusion.
7. The color coat should measure at least 1/8 inch thick, and the final assembly should measure no less than 7/8 inch thick. Some codes may only require a total 3/4-inch thickness, but that's too thin and will lead to cracking.
8. Don't obstruct the weep screed at the base of the wall with paint.
9. Don't use elastomeric paint as a remedy for leaks; testing shows that it won't work.

Figure 2. This window's bottom flange was taped to the sheathing (above). Trapped water caused the flashing membrane's adhesive to fail, directing even more water into the framing. Wrinkles in the membranes can also create water paths underneath stucco, as in the wide sill of this recessed window (right).

2 inches horizontally. I'd rather see at least 8 inches vertically and 4 inches horizontally; it's cheap insurance.

Flashing Tips

Another mistake we often find around windows is that self-adhering flashing tape has been applied over the bottom nailing fin (**Figure 2**). Water that leaks in around the window frame gets trapped behind the flashing and causes the adhesive to fail. Instead of sealing water out, the failed membrane actually channels water into the wall cavity.

We've tested various flashing products to see how they behave under field conditions, and have had good results with Fortifiber's Moistop neXT and Fortiflash, DuPont's FlexWrap and StraightFlash, Rainbuster 415 and 420 (800/473-1617, topindustrial.com), and OSI Winteq TeQ:Flash cold-weather butyl flashing paper (800/624-7767, osipro.com). Some of these products require primers under certain conditions, so be sure to follow the

Figure 3. Prefabricated plastic corners (A) and flashing tapes and membranes (B) simplify window and door installation. Always use a roller when installing self-adhering membranes, to get rid of wrinkles (C).

directions. We've found that even when not required, a primer can often improve adhesion. I also recommend manufactured flashing corners, like the Rainbuster 425 (**Figure 3**).

Electrical and plumbing penetrations. Many builders will just plug small openings with sealant, which often fails over time. For more reliable results, we recommend QuickFlash flashing panels (800/963-6886, quickflashproducts.com), which are specifically sized for different types of electrical boxes, light fixtures, and plumbing/hvac pipes. These products are easy to install and not terribly expensive, but need to be ordered in advance.

Lath Lessons

Some contractors fasten metal lath to the wall with pneumatic staples, but we've found that this can cause problems. For one thing, a staple has two prongs, so it creates twice as many penetrations as a nail. Furring nails are preferable; they have a small cork washer that helps space the lath

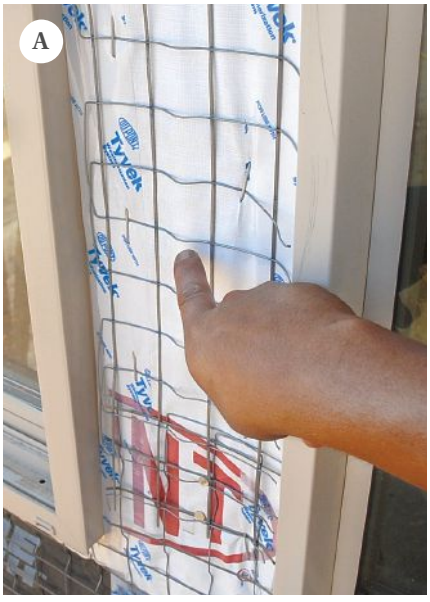


Figure 4. This wire lath (A) has been installed backward; it should be positioned so the ridges hold it away from the wall. The author advises against using staples (B) to attach lath, because the holes they make in the building paper tend to become elongated. Furring nails (C) are preferable; they have a cork washer that holds the wire off the paper and also seals around the shank.

Figure 5. Stucco crews often use their hatchets to bend the lath in inside corners, ripping the building paper in the process. It's a good idea to line corners with self-adhering membrane before installing the paper.

Figure 6. The open slits in the upper leg of this poorly installed weep screed (top) allowed water to soak the framing. Above, a wall has been repaired and is ready for stucco. The upper leg of the screed is behind the building paper as it should be, but there is not enough clearance to grade.

away from the wall and also seals around the nail (**Figure 4, previous page**). Take the time to ensure that every furring nail is perpendicular to the wall, and that the cork is compressed against the sheathing.

When nailing up lath wire, a good rule of thumb is to keep furring nails three fingers away from windows and doors. This ensures that you don't damage the nailing fins.

Corners. At inside corners, the stucco crew often use their hatchets to bend the lath. As a result, we often find tears in the building paper (**Figure 5**). Preformed inside corners like Cornerite are a good solution to this problem.

Screeds

To allow water to escape, the base of the wall should always terminate with a metal screed. There are two basic types: the kind with weep holes and the kind without. I prefer screeds with holes, because for many years I've seen them work effectively (**Figure 6**).

In high-wind areas — second-floor decks overlooking the ocean, for example — it's a good idea to flash the screed's nail fin with a 9- to 12-inch-wide strip of self-adhering flashing paper, such as RainBuster 415, Fortiflash Butyl, or DuPont Straight Flash. This will provide extra protection against water blown up into the wall in a driving rain.

Be careful not to paint over the seam where the metal and the stucco meet, especially with an elastomeric paint. This will simply block the escape route for any water that gets behind the stucco. Unfortunately, I also commonly see metal screeds that have been buried behind patio paving or landscaping. At minimum, code requires 2 inches of clearance between the screed and a walking surface, and 4 inches of clearance above the ground.

Gene Summy *owns TLS Laboratories in Laguna Niguel, Calif.*

Accept our CHALLENGE and get all the KOMA Celuka you want at the price of Free Foam.

IT'S A WHOLE NEW BALL GAME.

TAKE THE CELUKA CHALLENGE

Experience the benefits of MVP KOMA® Celuka trim board, corner board and bead board, the board with the hardest surface in the game. In addition,enjoy the view from the batter's box with this incredible promotional offer: simply take the KOMA Celuka Challenge and get KOMA Celuka for the same price as KOMA Free Foam. We'll even throw in a FREE KOMA cap with your first order. Now that's playing hardball.

Call **1-800-330-2239** or visit **komacelukachallenge.com** to learn more about this major league opportunity for your business.

Take the CELUKA CHALLENGE at Remodeling Show Booth 5422

KOMA CELUKA AT FREE FOAM PRICE

KOMA®

BUILDING PRODUCTS

Go to http://jlc.hotims.com for more info

The Hard Choice

A Division of Kommerling USA

Made in the USA

ARE YOU KIDDING ME!

If you're still painting using a traditional brush or roller there ***is*** a better way...

AIRLESS

Once you go airless you'll ***never*** go back.

AIRLESS SPRAYING IS UP TO ***10 TIMES FASTER*** THAN BRUSHING OR ROLLING

Professional painters know that Graco airless paint sprayers provide a quality finish and save time and money!

Whether you're a handyman, remodeling contractor, property maintenance pro or a painting contractor, you too can tackle bigger painting jobs with ease with Graco's Magnum ProX9. The Magnum ProX9 is the affordable heavy-duty choice for frequent (twice-a-month) painting needs.

Now put down the brush and roller! Once you experience the time savings and finish quality of a Graco Magnum airless sprayer, you'll never want to tackle another painting project without it again.

BENEFITS:

- **Fast** – Do more in less time
- **Professional Quality Finish** – Smooth uniform coverage
- **Easy to Use** – Ready to paint in minutes
- **Easy to Clean** – Ready for your next project

Magnum ProX9
Model #261820

MADE IN U.S.A. WITH GLOBAL COMPONENTS

To learn more about the entire line of Graco Airless Sprayers and Accessories visit
magnum.graco.com

GRACO

Go to http://jlc.hotims.com for more info

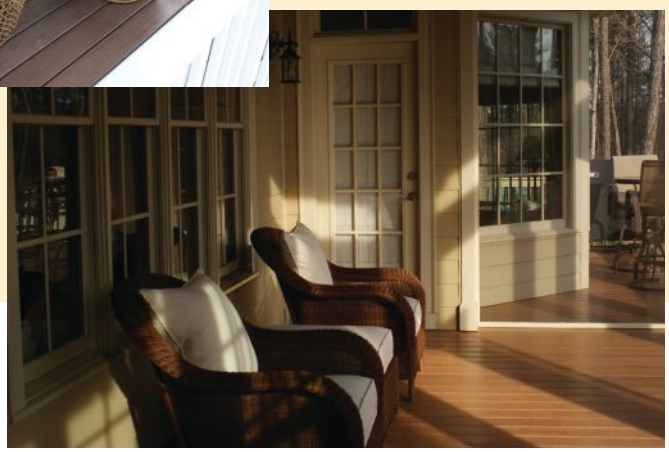
HOTPRODUCTS

NyloDeck: The "Non-Composite" Composite Decking Material

In search of the right deck material to create the ideal outdoor living space? Most composites are a mixture of wood fiber and plastic, but NyloDeck is like no other material. It's made with a patented process using recycled carpet fiber and resins that's been proven in the marine industry.

No Wood. No PVCs. No Worries.

NyloDeck is the 'non-composite' composite deck board, because unlike virtually every other option available, it contains NO wood or PVCs, and isn't a cap stock product that can be easily compromised. NyloDeck is impervious to moisture, rotting, termites, mold and mildew and possesses excellent strength, durability and performance qualities.



Eco-friendly NyloDeck is made using 100 percent recycled carpet fibers, e-glass, VOC-free bonding resins and UV protection via a patented manufacturing process. The result is an exceptionally strong, yet lightweight, color-through board. A 15' x 30' NyloDeck actually contains enough recycled fiber to carpet an average size home.

A proprietary embossing process creates natural looking, unique grains on every board. NyloDeck does not splinter, warp, peel, or pit and is simple to clean and maintain. Easy installation includes no pre-drilling and use of industry leading fasteners. Strength and rigidity enable board lengths up to 24' that can span joists up to 24" on center. NyloDeck is made in the USA at NyloBoard's plant in Georgia.

NyloDeck was initially rolled out as a concept in 2010. Since then, the company has conducted extensive testing and taken advantage of the latest manufacturing advancements to ensure a long-lasting, high performing product that is completely unique, yet priced competitively.

Currently, NyloDeck is available in five popular colors with matching fascia board. Combine NyloDeck with any number of railing options to create a truly beautiful deck design.

For more information call 1-877-695-6909 or visit www.nyloboard.com.

Go to http://jlc.hotims.com for more info

NyloDeck®
No Wood. No PVC. No Worries.

ENDURAMAX
High-Performance Wall System
By Oldcastle®

I fit in
so you'll stand out

I'm part of the future of masonry, and now you can be too. As part of the EnduraMax Wall System, I help you distinguish your business with cladding that offers unmatched energy savings, built-in moisture management and the unmistakable character of stone or brick. All of this comes in a system that's easily installable by any experienced contractor. That's smarter masonry that works harder for you.

EnduraMaxWallSystem.com/StandOut

Oldcastle® Architectural

Go to http://jlc.hotims.com for more info

Troubleshooting a Kitchen Remodel

by Al Coddington

Twists and turns in a complex kitchen installation call for constant problem-solving and a little luck

In theory, you should be able to choose all the components of a kitchen remodel before the work starts, develop a detailed plan, and move confidently forward in the certainty that nothing unexpected will arise. In reality, it hardly ever works out that way.

A recent project — undertaken for a longtime customer — is a good case in point. It involved installing new appliances and cabinets in a remodeled kitchen and dining area, based on a plan from a local architect. Because the owner, the architect, and I had all worked together, we trusted we could do the job on a time-and-materials basis without any party having to worry about being treated unfairly.

Flattening the Floor

The plans called for replacing about 600 square feet of existing carpet and sheet vinyl with new flooring. When we finally tore off the original flooring, we found some significant high spots in the subfloor, with variations of 3/8 inch or more. This might not have been an issue with new vinyl, but the homeowners had selected a tongue-and-groove bamboo flooring, and I knew the irregularities in the subfloor would telegraph right through.

We found that the worst of the high spots were along a floor beam, so I first tried cutting a little off the wood post that supported the beam to see if it would drop down. As I feared, it didn't work, so we shimmed the beam back to its original position, set all the subfloor nails we could find, and knocked down the high areas of the 2-inch-thick T&G subfloor with a power plane. (We did miss a few nails with the nail set, but we had no trouble finding them with the plane.) The flooring sub then took care of some remaining low spots with leveling compound. Laying the flooring turned out to be troublesome, too. The 9/16-inch material was meant to be

blind-nailed through the tongues, but it was so dense the flooring contractor gave up on nailing and glued the material down.

Cost › One and a half hours of my time, and a set of plane blades. I don't know if there was an extra charge for gluing rather than nailing the floor, since the owner contracted directly with the flooring company.

Giant Cabinets, Big Backaches

The owner had contracted with the cabinetmaker directly, so we had less input on this part of the project than we otherwise would have. And even though the problems we ran into weren't our fault, finding the solutions was mostly up to us. The cabinet above the refrigerator, for example, was built with a full-length side panel running down to the floor on the left of the fridge **(1)**. The unit would fit through the door only in horizontal position, but when the time came to install it, we realized it was too tall to stand upright. By sheer luck, there was a skylight well in the ceiling that gave us just enough space to accommodate the diagonal height as we picked up the cabinet.

The microwave and pantry base cabinets **(2)** were also so large that it took four men to carry them into the house, even after we had removed the doors and drawers. The integral toekicks compounded the problem. I generally ask cabinetmakers to provide separate bases and kicks — it's easier to level a 10-pound toekick than a 150-pound base cabinet — but, again, I wasn't dealing with the cabinetmaker directly on this project.

Cost › For the refrigerator upper cabinet, a half-hour each for me and my carpenter. No significant extra time for moving the cabinets, just some worry at night about whether anyone had hurt his back (a real issue for middle-aged builders).

An Outstanding Panel

High-end refrigerators seem to get bigger every year, and the model the customer finally selected was several inches deeper than the cabinetmaker had expected. As a result, the wood panels on the face of the fridge extend several inches beyond the surrounding panels. If we'd known about this in time, we could have stolen some space from behind the wall and framed a recess for the fridge to fit into. But given that the house was none too big to begin with, the customers preferred to stick with their refrigerator selection. They don't mind the discrepancy in the face of the cabinets, though the architect and I agree this was the biggest mistake on the entire project.

Cost › None.

Corner Clearances

One corner of the base cabinet run was a trifecta of conflicts **(3)**. The first had to do with the drawers on either side of the corner **(4)**. These slid by each other easily until we installed the pulls; fortunately there was just enough side-to-side adjustment in the slides to gain the necessary clearance.

The second was a conflict between one of the corner drawers

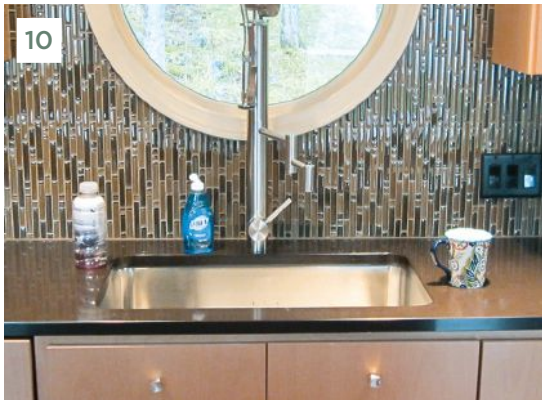
Deck Framing Solutions

SIMPSON
Strong-Tie®

Simpson Strong-Tie is your resource for deck connectors and fasteners as well as education on deck framing and code requirements. Our DTT deck tension tie meets the code for connecting guardrail posts to the deck framing. Using our new high-strength SDWS deck ledger screw requires 40% fewer screws than lag bolts. And our time-saving Strong-Drive® structural-connector screws are designed to perform with our most popular connectors. For all your deck hardware solutions, make sure you stock Simpson Strong-Tie.

For more information and to see our DeckTools® deck design software in action, visit our Deck Center at **www.strongtie.com/deckcenter** or call (800) 999-5099.

Go to http://jlc.hotims.com for more info



and the range, which prevents the drawer from opening fully **(5)**. There was no good solution, but because the restriction is only a couple of inches, the owners find they can live with it.

The extra depth of the refrigerator created another problem **(6)**. The inside corner base cabinet to the right of the range contains baskets designed to pull out and then to the right, to give access to an inner basket. The problem was that when the hardware was pulled to the right, it ran into the projecting refrigerator panel.

This was the cabinetmaker's mistake, so he had a metal shop cut down the outer basket to fit. We made the necessary adjustments on site to reinstall the hardware and get it to work.

Cost › The cabinetmaker spent hours figuring out what to do and incurred some fabrication cost, but my time was negligible.

Fussy Pantry Cabinet

The pantry unit has a rotating inner shelf that spins only if the door is opened beyond a certain angle. Unfortunately, the 5-inch fir baseboard used everywhere else in the kitchen got in the way here, so we substituted a piece of ¾-inch base shoe **(7, 8)**. So far, no one has complained.

Cost › One hour.

Troublesome Toekick Heater

The bar sink cabinet was supposed to have an electric heater in the toekick. But when the time came to install it, we found the grille of the heater stuck out ½ inch beyond the cabinet on either side, making it impossible to slide the bar fridge and the icemaker into place. Luckily, there was a pretty simple fix: We relocated the heater to the toekick of the island cabinet — basically just a matter of having the electrician make another trip under the house to move the wire. It was fortunate this was discovered before we cut a hole in the toekick of the bar sink base.

Cost › One hour of my time, and a quarter-hour for the electrician, as he had to go under the house anyway for other reasons.

Trimming the Trim Ring

Although we thought we'd left plenty of space between the recessed lights and the walls, we forgot to allow for the ¾-inch-thick trim around the top of the refrigerator cabinet. Rather than moving the fixture itself and having to patch the smooth plastered ceiling, I ripped the trim down to about 7/16 inch thick and cut a very slight amount off its edge to allow it to fit into place **(9)**. Though it doesn't jump out at you, I'm not completely happy with this solution. The clients are happy with it, however.

Cost › One hour.

Saved By a Single Bowl

The kitchen sink and its high-end faucet were both intended to be centered on the gap between the drawer fronts below and the round window behind. Unfortunately, there was a slight discrepancy in the various dimensions: If we had centered the faucet on the window and sink, the drawer gap would have been visibly out of line with everything else. We solved the problem by moving the faucet ever so slightly off-center in relation to the sink, bringing it closer to the drawer-front gap **(10)**. It's good the customers had chosen a single-bowl sink; the discrepancy would have been much more visible against a double sink with bowls of equal size.

Cost › A half-hour.

MEET CODE.
LOWER COST.

TimberLOK is used by professional contractors nationwide to meet code and lower costs for rafter and truss to top plate connections.

Meet Code: Tested and proven to meet 2009 IRC requirements for rafter and truss to top plate connections.
Lower Cost: Requires no predrilling, saving time and labor.

TimberLOK is part of the FastenMaster LOK Line family of structural wood fastening products. Visit our website to learn more, download technical documentation, watch an installation video or find a dealer near you.

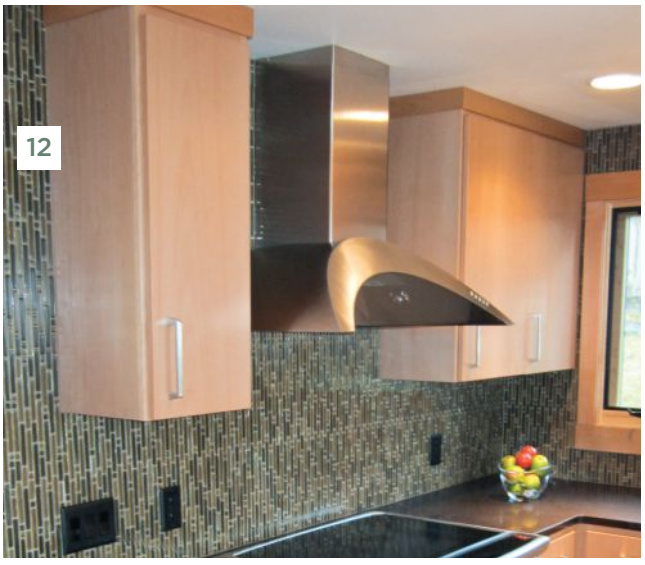
RAFTER OR TRUSS TO TOP PLATE CONNECTION

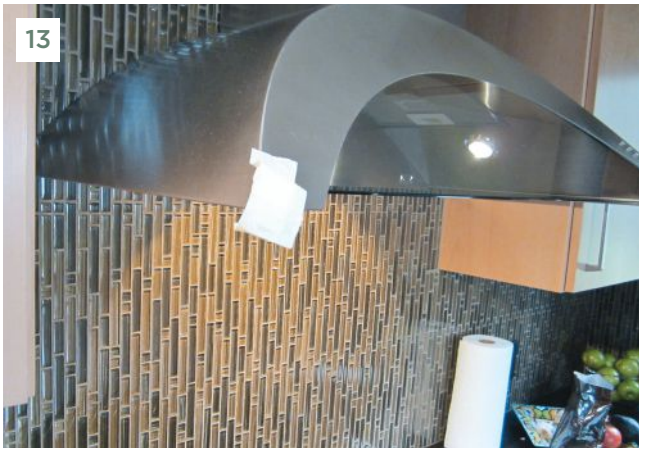
Fastener	Hurricane Clip	6" TimberLOK
Code-Compliant	✓	✓
Additional components	10 nails	**NONE**
Installation Time	**1 min, 17 sec**	**10 sec**

www.FastenMaster.com **800·518·3569**

Go to http://jlc.hotims.com for more info

FastenMaster TimberLOK®
Heavy Duty Wood Screw


12


13

Tiny Tile Issues

The owner chose glass tile for the backsplash, and each tile was only 5⁄8 inch wide **(11)**. I realized in advance that laying out the electrical boxes was going to be more critical than usual, with all those vertical grout lines to contend with and no practical way to cut such tiny tiles. It may sound obsessive, but I planned the exact side-to-side location of each box, installed blocking as needed, and mounted the boxes myself with a 1⁄16-inch tolerance side to side. The tile installer was happy.

Cost › Two hours.

More Pesky Appliances

Like the fridge, the icemaker and dishwasher have wood front panels, but at first we couldn't push either unit in far enough back to get the panels to align with the adjoining cabinets. In the case of the dishwasher, the issue was resolved by cutting out a section of the 1x3 I had fastened to the wall to support the back edge of the countertop. With the icemaker, there wasn't enough room for the drain and supply hoses and the power cord, so I had to cut a 12-by-12-inch opening in the drywall for them to fit into.

Cost › Two and a half hours.

Troubleshooting the Range

The range was designed to be pushed all the way against the wall until its back made contact with the drywall, with the power cord fitting into a recess in the range itself. When it wouldn't go back all the way, we found that the code-required anti-tip bracket — which mounted to the wall and engaged the leg of the range — stuck out too far. We finally made it work by recessing the bracket into the drywall. Moving the range back and forth was a bear.

Cost › Three hours.

Range Hood Too Tall

The high-end range hood mounts to the wall on a concealed bracket, with a telescoping two-part rectangular chase above it that contains the electrical components and exhaust duct **(12)**. Because it's made for an 8-foot ceiling but we only had 7 feet 8 inches, the only way to make it work was to shorten the rectangular chase — a task we farmed out to a local sheet-metal shop. They did a neat job, and the modified unit went in fine.

Unfortunately, the sharply angled corners of the hood itself have proven to be a liability **(13)**. My carpenter, the electrician, and I all managed to drive these corners at least a little way into our heads while installing the unit, and the homeowners have had the same problem. This is really a design defect, and there are only two possible solutions — throw the expensive item away and install a different one, or learn to avoid the corners. The homeowners have opted for the second course.

Another issue with the hood is that it has a maximum volume of 450 cfm. A local code provision requires that makeup air be provided for any hood that moves more than 400 cfm. It's a brand-new requirement, and so far no one seems to know how to meet it in practice. It was apparently new to our inspector, too, because he didn't call us on it.

Cost › One hour of my time, $45 for the sheet-metal work.

Conclusion

At the beginning of the job, I estimated my costs would run around $50,000, with an additional 4 percent to 6 percent for contingencies like the ones described above. Even if I had been working with a firm quote, the contingency fund would have covered the changes and I wouldn't have needed to write change orders. Because the job was done time-and-materials, I simply billed for the additional work.

Finally, it's worth noting that in my experience, the number and variety of problems I encountered on this kitchen installation didn't constitute some sort of contractor nightmare, but were simply par for the course for this type of project.

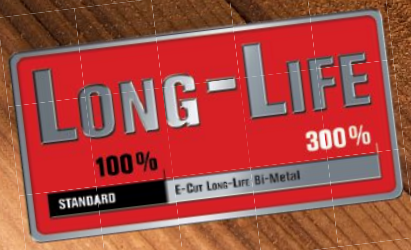
***Al Coddington** is a builder and remodeler in Eugene, Ore.*

Tools now starting from **$199***

FEIN MultiMaster Start Q

FEIN MultiMaster E-Cut Long-Life Blades

Unsurpassed value. Ultimate performance.



Engineered and Made in Germany

The innovation of FEIN has yet again raised the bar in performance and durability with the introduction of FEIN MultiMaster E-Cut Long-Life blades. Thanks to special bi-metal toothing, these blades have a 300% longer life, and offer unrivaled resiliency. FEIN MultiMaster E-Cut Long-Life blades present an unbeatable value in application solutions that will outperform…and outlast…the rest.

FEIN. Unverwüstliche Elektrowerkzeuge.

For more information or to find a dealer near you, please visit www.findmultimaster.com.
* MSRP

Schluter® Systems

Schluter®-DITRA

Uncoupling membrane for tiled floors

- Ensures the lasting beauty and functionality of tiled floors
- Prevents the main cause of cracked tiles
- Waterproof to protect your subfloor
- Lightweight alternative to cement backerboard
- Easy to handle and transport
- Cuts with utility knife or scissors – no saws and no dust
- Quick and easy to install

25 Years Schluter®-DITRA

Enter the DITRA 25 contest for your chance to win!

Do you have an amazing DITRA story? Have you installed the DITRA uncoupling membrane somewhere spectacular, somewhere unique? We want to hear from you!

Visit **www.DITRA25.com** to share your DITRA story.

Go to http://jlc.hotims.com for more info

www.schluter.com | 800-472-4588

View installation videos as well as tips and tricks at: www.youtube.com/schlutersystems1

Products | by Tom O'Brien

Door-Saver.

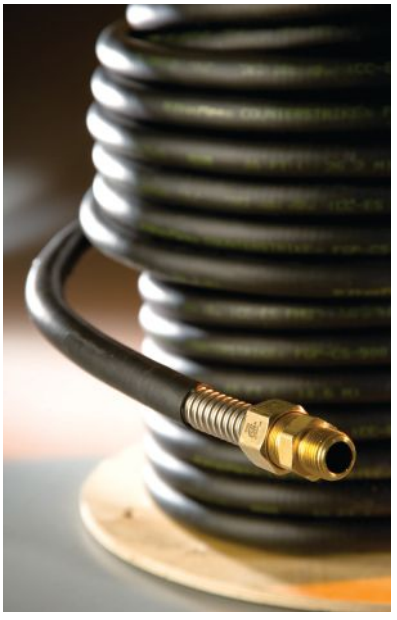
Cetol Door & Window Finish is a translucent coating that maintains the beauty of exterior wood surfaces better than polyurethanes or varnishes, says the maker. The high-solids alkyd formulation contains ingredients — like iron oxide pigments and UV absorbers — that help it stay flexible and resist sun damage. It comes in two clear sheens (satin and gloss) and four colors and costs about $65 per gallon.

AkzoNobel, 866/745-5367, sikkensfinishes.com.

Two Ovens in One.

Miele's *Speed Oven* packs a 1,000-watt microwave and a European-style pressurized convection oven into one 24-inch-wide unit. It features a variety of automatic settings, including "AutoRoast," which uses a probe to prevent overcooking, and the "MasterChef" menu, which automatically sets the cooking mode and time for different types of food. The oven costs $3,200.

Miele, 800/843-7231, mieleusa.com.



Lightning-Safe Gas Pipe.

According to its maker, *TracPipe CounterStrike* corrugated stainless steel tubing (CSST) needs fewer fittings to install than traditional black iron and has a conductive black jacket that eliminates any need for additional bonding to prevent damage from lightning. The company claims the heavy jacket also makes the tubing more crush-resistant and easier to straighten than other CSST products. It comes in seven sizes. Prices range from $4.50 per foot for 3/8-inch pipe to $29.50 per foot for 2-inch pipe.

OmegaFlex, 800/671-8622, tracpipe.com.

Slate Lite.

In a traditional slate roof, much of the stone is hidden. SlateTec's lightweight slate roofing replaces what you can't see with a sheet of underlayment, making it lighter, less expensive, and quicker to install than conventional slate roofs, the company says. It's made with S1 Grade Vermont slate and comes in 1/4- to 3/8-inch thicknesses (6 pounds per square foot) or 3/8- to 1/2-inch thicknesses (9 pounds per square foot). Buyers can choose from seven semi-weathering and four nonweathering colors. Prices start at $425 per square, including underlayment.

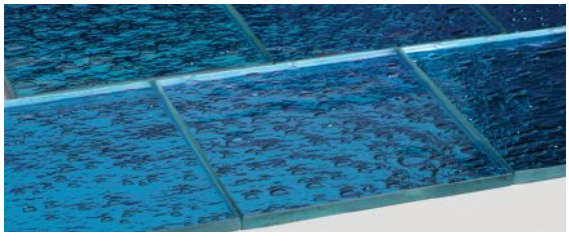
SlateTec, 855/752-8383, slatetec.net.

For more information about these products, go to http://jlc.hotims.com.

Products

Space-Saver. *SmartCab* is a pull-out cabinet organizer made to fit 15-inch or 18-inch base cabinets that have a drawer above the door. It requires only four screws to install and comes with soft-close runners for smooth, quiet operation, the maker says. Adjustable shelves and a range of optional accessories — like spice racks, cutting boards, and roll organizers — allow users to tailor it to their needs. The insert costs $290; accessories cost $30 to $130.

Hafele America Co., 800/423-3531, hafele.com/us.



Glass Wall Tiles. *Modono Glass Tiles* have a coating that makes them shimmer and appear to change color depending on the viewer's perspective. They're suitable for backsplashes, shower walls, and spas, and come in 24 colors and standard sizes from 2 by 2 inches to 12 by 28 inches. Larger custom sizes are also available. Prices range from $30 to $64 per square foot.

Applied Coatings Group, 585/247-6000, modonoglass.com.

For more information about these products, go to http://jlc.hotims.com.

25 WAYS WE HELP YOU TRIM SMARTER

NO. 17

You're never limited.

At VERSATEX, from products to packaging, we provide you with options. From our soffit systems to our custom-cut trim and sheet offering, you're never limited with VERSATEX. We simply offer more. And we do more. We go out of our way to make sure you get the products you want – the way you want them. We'll cut to length, cut to width, offer blended unit packages known as "Mixed Nuts," or smaller units we call "Smart Packs." Simply put, we do whatever it takes to make your life easier by providing you with options. And the No. 17 way we help you Trim Smarter.

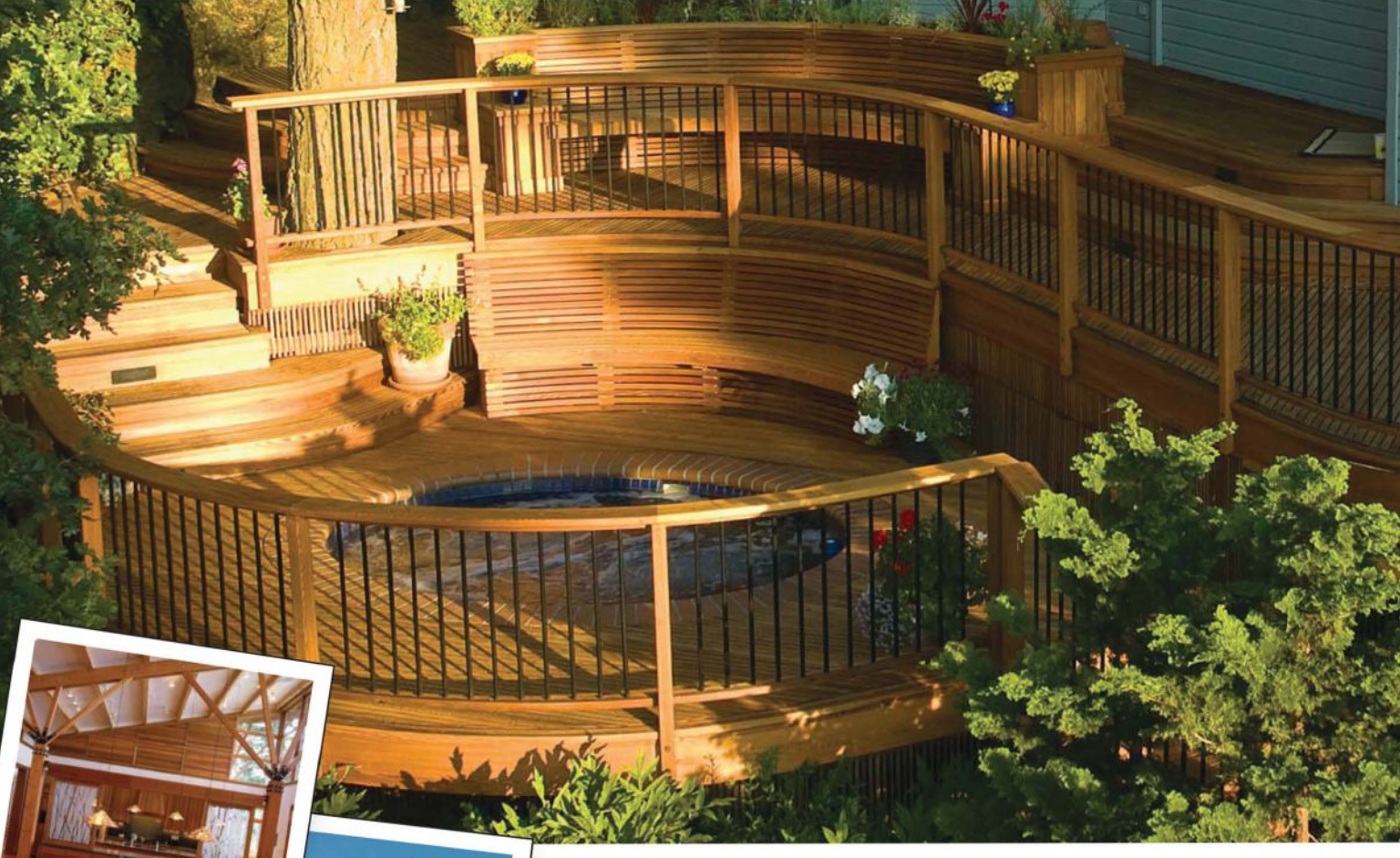
Discover 25 ways we help you Trim Smarter at www.VERSATEX.com
Or access our new mobile site at www.versatexpert.com

724.857.1111

Go to http://jlc.hotims.com for more info

VERSATEX®
TRIMBOARD

TRIM SMARTER.



Not all suppliers are created equal,

Buy your Western Red Cedar from these quality producers.

WRCLA MEMBERS

Enyeart Cedar Products
Gilbert Smith Forest Products
Haida Forest Products
Idaho Forest Group
Interfor
Mary's River Lumber Company
Mid-Valley Lumber Specialties Ltd.
North Enderby Timber
OrePac Building Products
Power Wood Corp.
Quadra Wood Products
Sawarne Lumber
Shakertown
Siskiyou Forest Products
Skana Forest Products
West Bay Forest Products & Manufacturing
Western Forest Products

AFFILIATE MANUFACTURERS

BW Creative Wood Industries
Cedarshed Industries
Outdoor Living Today
Synergy Pacific Engineered Timber
Woodway & Arboria / LWO

REAL CEDAR
WRCLA

www.realcedar.org
1.866.778.9096

SCAN THIS CODE

Products

Custom Copper.

Metal-fabricator Four Seasons Corp. will use your design to create a range hood in 16-gauge patinaed, hammered, flamed, or oak-leaved copper. All seams are welded, ground, and polished, the company says. Prices range from $3,000 to $12,000, with the average job costing about $6,000. Lead time is about six weeks.

Four Seasons Corp., 800/514-6491, fourseasonsmetals.com.

Health-Minded.

Got a hypersensitive client? The maker of *Valspar Plus* is promoting it as the first paint to be certified as "asthma and allergy friendly" by the Asthma and Allergy Foundation. According to the company, the paint is VOC-free, has no lingering odor, and resists mold and mildew. It's sold in flat, satin, and semi-gloss sheens. Prices start at $40 per gallon.

The Valspar Corp., 800/845-9061, valsparpaint.com.

For more information about these products, go to http://jlc.hotims.com.

Products

Metal Look. *Mixology* is a resin tile with a metallic finish designed to replicate the appearance — but not the price or the weight — of solid cast metal. Field tiles come in two sizes (4x4, 6x6), seven patterns, and two finish choices (bronze and iron nickel). Ten trim pieces are also available. The tiles are intended for interior vertical applications and contain at least 50 percent post-consumer recycled content, says the maker. Prices range from $6.50 to $13 per piece.

Crossville, 931/484-2110, crossvilleinc.com.

Durable Shingles. *StormMaster* asphalt shingles are designed to look like wood shakes and slate shingles — and to last just as long, too, says the maker. They're made from a rubberized asphalt polymer that allegedly adds strength and durability, and are treated with Scotchgard to minimize staining and fading. All StormMaster shingles have passed testing for 130-mph wind resistance and Class 4 impact resistance, says the maker. Prices range from $95 to $115 per square.

Atlas Roofing, 800/388-6134, atlasroofing.com.

For more information about these products, go to http://jlc.hotims.com.

STINGER™

CN100 CAP NAILER

LIGHTWEIGHT / MANEUVERABLE / FAST / CODE COMPLIANT

The STINGER CN100 is the best practice for securing synthetic underlayments, roofing felt, and housewrap and is the first STINGER pneumatic nailer from National Nail Corp., the leader in cap systems technology.

The CN100 is designed for use with

-2000 ct

1" STINGER NailPac

stingerworld.com

Go to http://jlc.hotims.com for more info

national nail corp.
more than just nails

Products

Premium Paint. Sherwin-Williams says its zero-VOC *Emerald Acrylic Latex* is created with colorants that are free of VOCs yet don't adversely affect thickness or consistency. It comes in interior and exterior versions and is self-priming, stain-blocking, and highly scrubbable, says the company. Emerald Interior costs about $60 per gallon, Exterior about $70.

Sherwin-Williams, 800/474-3794, sherwin-williams.com.

Efficient Exhaust. Zephyr says its *Milano Island* range hood has been upgraded for better performance. The new model has a direct-current brushless motor that's supposed to be quieter and more powerful than the previous motor. It also has dimmable LED light bulbs and a computerized control system that the maker says reduces energy consumption by 80 percent. Retail pricing starts at $1,890.

Zephyr, 888/880-8368, zephyronline.com.

For more information about these products, go to http://jlc.hotims.com.

Are you a daredevil?

Daredevil™

Work hard, play hard—you know it, you live it. Your tools should work as hard as you do. Bosch Daredevil™ framing blades have triple-sharp teeth and a Speed Coat™ finish to start sharper and stay sharper. No wobble, lasts longer. And that means more time for you. **Better Accessories. Better Results.**

Photo courtesy of Sergio Guiducci, themobsyndicate.com

Go to http://jlc.hotlms.com for more info

!WARNING Do not attempt to duplicate action demonstrated in this advertisement. The depiction was performed by experienced professionals under controlled conditions and is not intended to demonstrate recommended power tool applications. Daredevil and Speed Coat are trademarks of Robert Bosch Tool Corporation.

BOSCH

Invented for life

BORAL®

Like no other.

Introducing **Boral TruExterior®** Trim

Boral TruExterior® Trim is creating a whole new category of reliable exterior trim that offers phenomenal performance, remarkable workability and a long lasting look – without the limitations that plague other exterior trim products.

- Maintains dimensional stability+
- No need to glue joints
- No need to prime ends or field cuts
- Easily accepts paint of any color
- Suitable for ground contact
- No cracking or splitting from moisture+
- 70% recycled content
- Resists rot and termite attacks+
- Accepts a wide variety of fasteners
- 20-year warranty+
- Cradle-to-Cradle Certified℠ Silver

CERTIFIED℠ cradle to cradle SILVER

SCS CERTIFIED Minimum 70% Recycled Content Pre-consumer SCIENTIFIC CERTIFICATION SYSTEMS SCS-MC-02467

+Please see Boral TruExterior Trim Limited Warranty and Product Data Sheets for proprietary test results located at www.BoralTruExterior.com
Cradle to Cradle Certified℠ is a certification licensed by the Cradle to Cradle Products Innovation Institute.

Build something great™ Go to http://jlc.hotims.com for more info 888-9BORAL9 **www.BoralTruExterior.com**

Toolbox

Milwaukee M12 Band Saw

by David Frane

Earlier this year Milwaukee added a tool to its M12 line that I never expected to see: a cordless portable band saw. Many tool companies make 18-volt band saws, but this is the first subcompact (10.8-volt/12-volt max) model. At 6.75 pounds and 12 inches long, it's small enough to be used one-handed.

The M12 saw is aimed at electricians, plumbers, and other trades that need to cut pipe, electrical conduit, threaded rod, angle-iron, and the like. It's not supposed to do the job of larger corded and cordless (18-volt) band saws, though it can occasionally fill in for those machines. According to Milwaukee, the tool is best for someone who currently cuts metal with a hack saw or recip saw and wants to do the work faster and with less effort.

The included XC battery provides an impressive amount of runtime. The author was able to make about 130 cuts per charge in 3/4-inch EMT and 33 cuts in 5/8-inch rebar.

When the saw was announced, I asked the manufacturer to send me one — not because I was excited about there being another cordless band saw but because I couldn't believe one this small could do anything useful. I quickly learned that it could. I also discovered that you find yourself cutting a lot more metal when you have a saw that does it so easily. Tasks I used to avoid because they were slow or unpleasant to do with a recip saw or grinder have moved up on my to-do list. I tried the tool out on scrap material, and used it to cut rebar for a patio project and bolts and angle-iron for various repairs.

Speed and Capacity

The saw cuts faster than a recip saw and is easier to control. It has a variable-speed trigger and the blade goes 0–250 feet per minute (fpm). By way of comparison, Milwaukee's 18-volt band saw tops out at 480 fpm, which is in line with what corded models can do. The manufacturer claims this saw can cut 3/4-inch EMT (electrical conduit) in as little as three seconds. I timed a few cuts and it took me about five seconds per cut.

The throat of the saw will accept material up to 1 5/8 inches wide and deep — though the tool works best on smaller material. I tried it on 1 5/8-inch Unistrut; it worked, but if I had to cut a lot of this material I'd prefer to have a bigger saw.

Runtime

One question always comes up with new cordless tools: How much work can it do before you need to change batteries? According Milwaukee, the M12 band saw can make up to 150 cuts per charge in 3/4-inch electrical conduit with the supplied six-cell XC battery. Runtime is less with standard three-cell batteries.

I tested runtime by putting a new blade and a fresh XC battery in the machine and making short cuts in 3/4-inch conduit. To avoid overheating, I rested the tool for five or 10 minutes after every 24 cuts. The battery lasted for 128 cuts. Although the blade was still sharp, I replaced it for the second round of testing. To make sure I hadn't received a bad battery, I performed Round 2 with an M12 battery from a different tool. This time I got 127 cuts. I originally planned to perform the test three or more times, but the results were close enough to each other and to the manufacturer's claims that I decided to quit and call it good.

2429-21XC Specs

Weight: 6.75 pounds
Length: 12 inches
Capacity: 1 5/8 inches (width and depth)
Blade speed: 0–280 feet per minute
Web price: $200 (kit); $140 (bare tool); $16 (3-pack of blades)
Kit includes: Tool, charger, blow-molded plastic carry case, one 6-cell XC M12 lithium-ion battery, and one 18 TPI blade.

Milwaukee Electric Tool
800-729-3878
milwaukeetool.com

Toolbox | Milwaukee M12 Band Saw

While I am not an electrician, I think this tool could get the average residential electrician through a full day's work on a single battery.

Since not every material is as easy to cut as conduit, I also performed a runtime test on 5/8-inch rebar, which is hard to cut with a recip saw. This time I got 33 cuts per charge. As with the conduit, the machine cut steadily and the motor did not slow down until the battery was nearly depleted.

Blade Life

I didn't change the blade before the rebar test because it didn't seem to have been dulled by the conduit. In fact, it wasn't even noticeably dulled by the rebar. I can't tell you how many cuts you'll get per blade, but I can tell you that cutting metal with a band saw is cheaper than doing it with a recip saw.

Unlike a recip saw — which uses only an inch of teeth — a band saw makes equal use of all the teeth on a very long blade. Heat is the great destroyer of cutting edges, and band-saw blades run cooler because only a fraction of their teeth are against the work at any one time.

It could be that a grinder with an abrasive wheel would be equally economical, but I prefer using a band saw. With an abrasive wheel, there's all that grit to clean up, and sparks could start a fire — a constant concern when sawdust is present or when you're working outdoors in dry western states.

Features

Features include a variable-speed trigger and a built-in light that shines on the cutting area. LEDs on the side of the housing indicate the level of charge. The blade tracked correctly out of the box, but if you need to adjust tracking, there's an adjustment screw on the back of the blade housing.

Changing blades is easy: You pop the latches, open the cover, release the blade tensioning lever, and swap out the blades. After that, it's a matter of engaging the tensioner and closing the cover.

An LED lights the throat of the saw, which is large enough to cut 1 5/8-inch material.

The blade rides between two pairs of guide bearings and can be accessed by popping the latches and opening the cover.

The Bottom Line

If you do commercial or industrial plumbing, electrical, or sprinkler work, this is not the tool for you; you'd be better off with a corded machine or one of the bigger 18-volt models.

But if you do residential electrical or plumbing work — or remodeling, maintenance, or anything else that requires intermittent cutting of small pieces of metal — the M12 band saw is worth a look. Yes, it's an extra tool to buy and carry, but it does a good job cutting metal and it's easier and more pleasant to use than a recip saw or a grinder.

***David Frane** is editor of* Tools of the Trade, *which is where this article first appeared.*

Do Less. Make More.

You're a professional who's passionate about his work. You know that it takes a dedication to the craft and years spent honing your skills to deliver exceptional work you can be proud of.

But when you spend the majority of your precious time on needless prep work or cleanup, you're left with less time to focus on value-adding work, and slimmer profits at the end of the day.

That's why Festool builds tools that work as a cohesive system—designed for precision, efficiency, and ultimately, to make you better at what you do. We want you to reach the highest levels of excellence in your work, in less time, and with more money in your bank account. And most importantly, we want you to be proud of what you accomplish.

Visit us at **festoolusa.com** to learn how you can produce better work and make more money, while spending less time on the thankless tasks that get in the way.

FESTOOL®

Faster. Easier. Smarter.

Learn more about the entire Festool System

Visit www.festoolusa.com

FastCap Magnetic Dust-Barrier Door

by Steve Greenberg

It's always been a good idea to contain dust when working in a client's home, but thanks to the RRP rule, it's now the law. In my RRP class, we learned how to use overlapping flaps of plastic to make doors for our dust enclosures, but I quickly graduated to glue-on zipper-style doors, which do a better job. Still, they're clumsy to use and can bind or even fall off — so I was intrigued when I first saw FastCap's new magnetic barrier door (888/443-3748, fastcap.com) at the *JLC* Live show last spring.

This door is made of a tent-like nylon fabric, and hangs like a divided curtain from a cross bar that attaches to a pair of aluminum poles. Semiflexible magnets are sewn from top to bottom along the inner side of each flap. A second set of magnets is sewn into the inside corner at the base. When you walk through the door, there's nothing to unclip or unzip; you simply part the flaps and go through, and they automatically close behind you, thanks to the magnets — which stick not only to each other but to another magnet centered on the bottom threshold bar.

Setup

Setting up the door is easy (videos on the manufacturer's website clearly describe the process). First, we put up our main plastic dust wall, supporting it with old photographic background stands **(1)**. Next, we set up a pair of FastCap's Third Hand steel poles, plumbing them in both directions as if framing up a door. These supports are included in the $200 door-system kit, but a $100 version is available if you don't need them.

The door's threshold and header bars are designed to clip to the uprights; when the header bar is at the right height, the dust door flaps should reach the center of the lower bar. Once the door is in place, a T-shaped cut needs to be made in the barrier wall behind the door, so that about 3- to 4-inch-wide flaps of plastic remain inside the steel uprights **(2)**. These plastic flaps get wrapped around the upright poles, and are held in place with long flexible strip magnets supplied with the door.

Potential Problems

The doors work best when the door supports are plumb and level and the plastic barrier is taut. You also need adequate ceiling clearance; on a recent project with a low ceiling, our top header bar was pushed up tight against the pump clamps on the uprights, and as a result the door dragged a bit on the floor.

After using the door the first time, we followed the

KD NAVIEN

Ultra Condensing Efficiency (EF 0.95); SCH 40 3"
PVC Venting; Remote Control NR-10DU (Included)

FERGUSON®

COUNT ON US

1,350 locations. All 50 states. 300 showrooms. 17,000 associates.
59 years in business.

With Ferguson, you get so much more than building supplies. You get a long and distinguished history of dependable service, a coast-to-coast network of resources, and the benefit of dedicated professionals who deliver so much more than what goes onto the truck.

FAUCETS | FIXTURES
REPAIR PARTS | WATER HEATERS

FERGUSON.COM

FERGUSON® PROPlus+™

SCORE POINTS ONLINE.

Earn points you can redeem for great stuff like merchandise, tickets, and even trips!

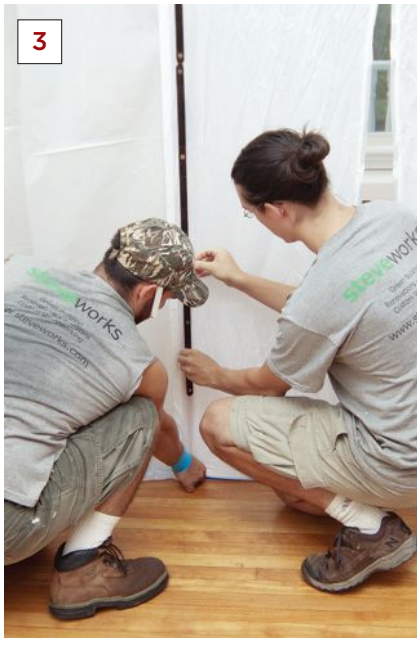
GET STARTED AT FERGUSON.COM/PROPLUS TODAY!

Go to http://jlc.hotims.com for more info

Nobody expects more from us than we do℠

advice of the online training video and rolled the door up around the top bar before putting it into the storage bag. But when we did this, the magnets rolled up too — and they didn't really unroll the next time I set up the door. I had to adjust each individual magnet to get it in the right place for the flaps to catch, and then give the flexible magnets time to "relax" so that everything worked as designed. Since these flexible magnets seem to be the key to making the door close and seal tightly, they ought to be either stronger or larger.

The regular strip magnets that are used to hold the door flaps to the supports **(3)** and the plastic from the dust wall to the upper header bar work fine, though — they're plenty "sticky." For storage, they can be left attached to the bars or stacked together.



Part of a System

Once the door has been tweaked to hang correctly, it does a pretty good job of containing dust, especially when we avoid using dust-generating tools near the opening. To improve enclosure performance, we usually set up a window fan, which creates negative pressure within the containment area and helps draw the door flaps closed. We also put down a tack mat (877/800-3723, certifiedrenovatorstore.com) at the entrance, which cleans the bottom of our shoes and prevents dust from getting tracked around **(4)**.

Our magnetic dust door was really put to the test on one recent job where the client was convinced our dust was causing him to sneeze constantly. We assured him that with our barrier, dust door, negative air-pressure fan, and sticky pad, we were doing everything we could. After three days, we were finishing up and the client was glad to see us go. When he once again remarked about our dust, I asked him if he would take a close look at a small framed picture that had been on a table next to our work area for the duration of the project. I asked, "Can you see any dust on the glass?" "Not at all," he replied.

Must have been the pollen.

Steve Greenberg *owns Steveworks LLC, a remodeling company in Newton, Mass.*

Give your windows the performance of a lifetime.

With the widest selection in the business, Royal Moulding & Trim products turn every project into a real showstopper. Our distinctive window and door surround systems replicate the beauty of wood and offer an affordable, easy-to-install upgrade for any home. Like all Royal products, our trim and decorative mouldings are made from durable, low maintenance 100% cellular PVC and backed by a lifetime guarantee never to rot.

Shine a spotlight on your homes with Royal Moulding & Trim products. To learn more, visit royalbuildingproducts.com

ROYAL Moulding & Trim

Trim • Fascia • Window, Door & Garage Surrounds • Decorative Moulding

800.368.3117 royalbuildingproducts.com

Education

Accessibility

Successful

The American Institute of Architects, through its continuing education system, is the largest source of education targeted to the design and building industry. And by offering quality education courses to AIA members on topics in your field of expertise, you have the unique opportunity to help the architectural profession and introduce your services to its practitioners.

That's why more than 2,500 companies and associations, such as BASF, Deltek, Glidden Professional, and Owens Corning, count themselves among our valued education partners.

THE AMERICAN INSTITUTE OF ARCHITECTS

CONTINUING EDUCATION AIA

Become an AIA CES Provider.
Gain access to and educate almost 80,000 AIA members.
www.aia.org/CESjoin

DIABLO®

PROVEN PERFORMANCE ...NOW IN RECIP BLADES

Carbide-Tipped For 10X Longer Life

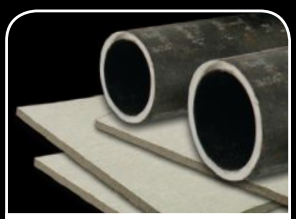
WATCH DEMO NOW!

Scan this QR code with a smart phone or go to: ***www.diablotools.com/videos/carbide-recip.html***

DIABLO OFFERS A COMPLETE RANGE OF RECIPROCATING BLADES FOR MAXIMUM PERFORMANCE IN ALL MATERIALS.

NAIL EMBEDDED WOOD

STAINLESS STEEL



FIBER CEMENT & CAST IRON

METAL

www.**facebook**.com/**diablotools** www.**DiabloTools**.com Tel:**1.800.334.4107** www.**youtube**.com/**diablotools**

Diablo powered by Freud America, Inc. | Red Reciprocating saw blades are a registered trademark of Freud America, Inc.

Go to http://jlc.hotims.com for more info

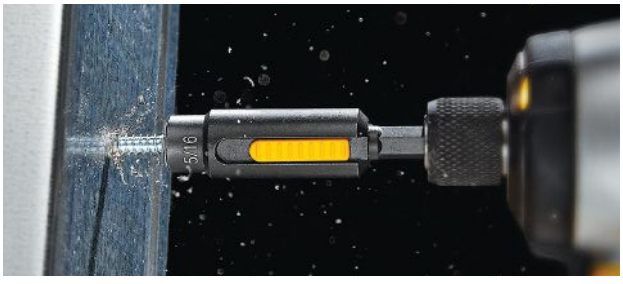
Toolbits | by Tom O'Brien

Dust-Catcher. The *SawBuddie* is a flexible rubber shroud — lined with bristles — that attaches to a recip saw. According to the maker, it captures as much as 99 percent of the dust generated by the saw without obstructing the operator's view of the cut line. When attached to a certified HEPA vacuum, it complies with RRP guidelines as a point-of-origin dust control system, the company says. It fits a variety of saws and costs $80. An 18-inch-long hose adapter is available for $20.

Dustless Technologies, 800/568-3949, dustlesstools.com.

Nonmarring Pry Bar. Stiletto's new 15 3/16-inch *SSFB15* flat bar is made of stainless steel, so there's no risk of rust stains tarnishing valuable trim elements. In addition to the typical straight and right-angle ends, it has a staple puller designed for 9/16-inch-by-1 3/4-inch flooring staples and a nail puller for extracting 16d commons. It also has a bottle opener. The tool costs $40.

Stiletto Tools, 800/987-1849, stiletto.com.



No-Clog Nut Driver. Removing metal shavings from a magnetized driver bit has never been an easy task — until now. DeWalt's *Cleanable Nut Driver* has a thumb slide that allows the user to push the magnet above the edges of the socket and simply wipe off the debris. It comes in five socket sizes (1/4 inch, 5/16 inch, 3/8 inch, 7/16 inch, and 1/2 inch), all of which have a 1/4-inch quick-release hex shank. Prices range from $6 to $11.

DeWalt, 800/433-9258, dewalt.com.

Safer Drilling. Studies have shown that frequent exposure to concrete dust can lead to lung disease, so it makes sense to take precautions. Makita's *Dustless Hammer Attachment* fits the company's SDS-plus corded and cordless rotary hammers and hooks up to a standard job-site vacuum. According to the maker, it provides superior suction without being cumbersome. It comes with a 17-inch hose and a sliding depth stop and costs $60.

Makita USA, 800/462-5482, makitatools.com.

For more information about these products, go to http://jlc.hotims.com.

October Advertising Index

ADVERTISER	PAGE	WEBSITE	PHONE
Ainsworth Engineered	13	TipsForSeasonedPros.com	
Ainsworth Engineered	26&27	pointsixexperts.com/josh	
American Institute of Architects, The	98	aia.org/CESjoin	
Astro Plastics	103	astroplastics.com	800-334-4474
Atlas Roofing Corp.	48	atlasroofing.com	
AZEK Building Products	40	azek.com	
BehrPro	4	behrproexperience.com	
Benjamin Obdyke Incorporated	37	hydrogap.com	800-523-5261
Boral TruExterior Trim	90	BoralTruExterior.com	888-9BORAL9
BOSCH Power Tools and Accessories	39	boschtools.com/jlc	
BOSCH Power Tools and Accessories	89		
Bostitch	OBC	bostitch.com	
CabParts, Inc.	88	cabparts.com	970-241-7682
Calculated Industries	96	calculated.com	800-854-8075
CertainTeed Gypsum, Inc.	29	certainteed.com	800-233-8990
Chief Architect	13	ChiefArchitect.com/FreeTrial	800-482-4433
Chrysler Group LLC / Ram Trucks	2&3	ramtrucks.com	
DeWalt	14	dewalt.com/20vmax	
Diablo	100	DiabloTools.com	800-334-4107
Eco-Strip, LLC	103	eco-strip.com	703-476-6222
ExakTime / JobClock	10	exaktime.com/jlc	877-554-0377
FastenMaster	77	FastenMaster.com	800-518-3569
Fein Power Tools	79	findmultimaster.com	
Ferguson Enterprises, Inc.	95	ferguson.com/ProPlus	
FESTOOL USA	93	festoolusa.com	
Grace Construction Products	IFC	graceconstruction.com	
Graco	50	graco.com/truecoatproii	
Graco	70	magnum.graco.com	
GREAT STUFF™ Insulating Foam Sealant	20&21	dowgreatstuff.com	
Grip-Rite / PrimeSource	16&17	grip-rite.com	800-676-7777
GRK Fasteners	82	grkfasteners.com	800-263-0463
Home Depot, The	7,25	homedepot.com/pro	
Home For Life	58	homeforlife2012.com	
Huber Engineered Woods, ZIP	34	switchtozip.com	
Huber Engineered Woods, ZIP	35	zipsystem.com/tape	
Husqvarna Construction Products	36	husqvarnacp.com	800-288-5040
In-O-Vate Technologies, Inc.	103	Dryerbox.com	
Jamsill	99	jamsill.com	800-JAMSILL
JLC LIVE	30	jlclive.com	
JLCOnline	38	jlconline.com	
Kett Tool Company	99	kett-tool.com	513-271-0333
Koma Building Products	69	komacelukachallenge.com	800-330-2239
Lumber Liquidators	92	lumberliquidators.com/commercial	800-274-2360
Malco Products, Inc.	99	malcotools.com	
Marvin Windows and Doors	9	pros.myMarvin.com/catalog	800-268-7644
Marvin Windows and Doors	32	IntegrityWindows.com/SpecialSizes	
Masterchem Industries, Inc.	12	kilzpro-x.com	
Maze Nails	31	mazenails.com	800-435-5949
Milwaukee Electric Tool Corp	62	m.milwaukeetool.com/m/cx	
Muro North America, Inc.	28	muro.com	800-665-6876
National Nail Corporation	87	stingerworld.com	
Nissan North America	22	nissancommercialvehicles.com	
Norbord Industries, Inc.	49	norbord.com/tallwall	
NyloBoard	71	nyloboard.com	877-695-6909
NyloBoard	IBC	nyloboard.com	877-NYLO-909
Oldcastle Architectural / EnduraMax	72	EnduraMaxWallSystem.com/StandOut	
Panasonic	57	panasonic.com/ventfans	
Porter Cable	1	PorterCable.com	
Royal Building Products	97	royalbuildingproducts.com	800-368-3117
Schluter Systems	80	schluter.com	800-472-4588
ShurTech Brands, LLC / FrogTape	85	FrogTape.com	877-FROGTAPE
Simpson Strong-Tie	75	strongtie.com/deckcenter	800-999-5099
Tamlyn & Sons	8	tamlyn.com	800-334-1676
Tapco Solutions by The Tapco Group	59	TapcoSolutions.com	
Titebond	18	titebond.com/PROvantage	800-347-4583
Tjernlund Products, Inc.	103	tjernlund.com	800-255-4208
Trex	11	trexpartners.com	
Trim-Tex Drywall Products	86	trim-tex.com	
Versatex	83	versatex.com	724-857-1111
Western Red Cedar Lumber Association	84	realcedar.org	866-778-9096
YGS Group, The	99		800-290-5460

congratulations

TO HANLEY WOOD'S
JESSE H. NEAL AWARD WINNERS

Hanley Wood is committed to publishing quality content that serves the information needs of construction industry professionals. Our editors have once again been honored by the most prestigious editorial awards program. **Join us in congratulating them.**

2012 WINNERS

BUILDER
Best Instructional Content

POOL & SPA NEWS
Best Technical Content

REMODELING
Best Instructional Content

2012 FINALISTS

ARCHITECT

ARCHITECTURAL LIGHTING

AQUATICS INTERNATIONAL

BUILDER

ECOHOME

ECO-STRUCTURE

MULTIFAMILY EXECUTIVE

PROSALES

REMODELING

RESIDENTIAL ARCHITECT

hanley wood

Contractor's Choice / Classifieds

Emergency Housing Cut to Length

When western Alaska's Kuskokwim River overflowed its banks in May 2011, sweeping away much of the remote Yupik village of Crooked Creek, state disaster-relief officials turned to the Fairbanks-based Cold Climate Housing Research Center for help. Nine replacement homes were needed, on a tight budget and within an even tighter time window. Throughout the month of June, CCHRC president Jack Hébert and his staff collaborated with a truss manufacturer in the port city of Kenai to work out the details of an innovative framing system that combined roof, walls, and floor in a single whole-house truss.

Thanks to the one-size-fits-all truss design, homes of different sizes varied mostly in length and interior floor plan. The simple foundations consist of two parallel glulam beams fastened to pressure-treated timber cribbing on pads of native river gravel.

Blocking between trusses took the place of a conventional bottom plate; a 3/8-inch plywood skin beneath the bottom chords of the open-web floor assemblies served as backing for a thick layer of polyurethane spray foam. An open space between the upper surface of the foam and the subfloor above provided an unobstructed and frostproof plumbing chase.

In mid-July, the trusses and other required building materials were loaded on a barge for the 1,200-mile sea voyage around the Alaska peninsula to the north side of Bristol Bay. On their arrival a month later, barge and materials were met by a crew of mostly volunteer builders who swiftly began assembling four types of structures, from a 24-by-16-foot studio apartment to a 24-by-52-foot four-bedroom house.

The new homes share a simple, utilitarian appearance. Their interior walls and ceilings are paneled with AC plywood finished with flame-retardant paint, and exteriors are sided with prefinished steel roofing applied horizontally. But their energy performance is exceptional. A thick layer of closed-cell foam sprayed against the building envelope from the inside and an open-web truss design that virtually eliminates thermal bridging should make them remarkably warm and tight. And with the first snows of winter already falling when the crew wrapped up work in the middle of October, both qualities were quickly put to the test. — *Jon Vara*

All nine of the new homes, completed in the rapidly shortening days marking the approach of an Alaskan winter, feature air-lock entries and R-60 thermal envelopes.

Introducing a new generation of NyloDeck. Meet an unmatched combination of beauty, strength and reliable performance that's like no other material. Proven in the marine industry, a patented process using recycled carpet fiber makes NyloDeck incredibly durable and eco-friendly. Great looks and versatility make it the ideal, worry-free deck today and for years to come.

- Impervious to water, mildew, mold and termites; no rot or swelling
- Lightweight, yet strong and easy-to-use
- Unique grain on every color-through, UV-protected board
- Spans up to 24 inches and up to 24-foot lengths

Let us help you build the ultimate deck or dock upgrade, with the confidence of a 25-year warranty and hands-on customer support. Find out more at www.nyloboard.com.

NyloDeck®
No Wood. No PVC. No Worries.

Find us on:

VISIT US AT DECKEXPO BOOTH #2104 — OCTOBER 10-12, 2012

NyloBoard – Made in GA, USA – 877-NYLO-909 (877-695-6909)
Go to http://jlc.hotims.com for more info

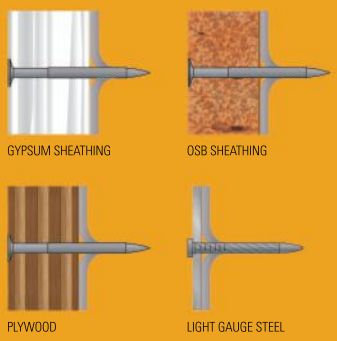
THE SPEED YOU NEED,
WITH THE POWER YOU DESERVE

THE NEW WAY TO DO STEEL FRAME CONSTRUCTION

The revolutionary BOSTITCH® SF150C Light Gauge Steel Nailer eliminates screws and provides a fast and productive way to work.

It's powerful design allows the tool to easily drive fasteners through gypsum sheathing and light gauge steel. The tool-free depth adjustment allows you to control nail depth without overdriving, so you can tackle commercial sheathing with the confidence to meet and exceed code requirements.

Visit your local distributor for more information, or check it out at BOSTITCH.com



Uses 3 different collated steel stud fasteners ranging from:

1" to 1-1/2"

Visit BOSTITCH.com to view custom code reports

7 YEAR BOSTITCH LIMITED WARRANTY

DESIGNED FOR PRODUCTIVITY.
BUILT TO LAST.™

STANLEY BOSTITCH

Go to http://jlc.hotims.com for more info