Letters

Wormdrive Clarification

To the Editor:

I feel it is important to bring to your attention potentially misleading information in the tool test article on wormdrive and hypoid gear construction saws by Tim Uhler (2/04). As referenced in the author's lead paragraph, users frequently and incorrectly refer to various inline circular saw models as wormdrive saws. While this error is recognized, the article perpetuates the incorrect use by categorizing the entire test as "wormdrive saws" on the cover and in the story title, when half of the tools tested are actually hypoid gear circular saws.

Distinguishing between wormdrive and hypoid gear saws as part of the larger category of "inline circular saws" is important to any user making a tool purchase. By referring to non-wormdrive saws incorrectly, the article could mislead the average user to purchase these saws and think they offer the same benefits.

For more than 75 years, our wormdrives have been the industry standard in accuracy, durability, and power in construction saws. While other inline saws have benefited from being associated with wormdrives, they should not be tested or compared as such, because they don't offer the same benefits wormdrive users know and appreciate.

Finally, users should also recognize that the terms "wormdrive" and "inline" are not interchangeable; rather, the first is a subcategory of the second. Because a saw is inline, meaning the motor and gear train fall in line with the blade, does not mean it has wormdrive gears. By perpetuating this common misunderstanding, the article only does readers a disservice instead of helping them to make more educated tool choices.

Randall Coe
Director, Product Development
Bosch Power Tools
Mt. Prospect, Ill.

Pleasantly Surprised

To the Editor:

I just wanted to pass along a note of thanks for the continued publishing of your magazine. This month (2/04), in addition to reading an article by an old classmate ("Shearwalls for Coastal Homes"), I was pleasantly surprised to see a woman on the cover. Your magazine does more than just educate. It brings us together in many ways. Keep up the great work.

Carolyn Coleman Burke
Project Manager
Hawtin Jorgensen Architects
Jackson, Wyo.

First Lady?

To the Editor:

I am a subscriber and regular reader of your excellent magazine. I may be wrong, but I suspect that your February 2004 cover is the first featuring a woman wearing the tools. In an industry known for the display of pictures of women wearing as little as possible, I find your low-key inclusion wonderfully appropriate.

Tracy Marlow
Darien, Conn.

Women also appeared on our covers in February 2002, June 1999, and January 1985 (shown), when we were New England Builder.

— The Editor

Load-Tested Deck Ledger Connections

To the Editor:

Thank you for the practical article "Load-Tested Deck Ledger Connections" (3/04). The article raises a question, though. It appears that in these tests the joist hangers are attached to the ledger only. Was any consideration given to the effect of the joist hanger nails on strength or deflection, assuming these nails penetrate through most of the thickness of the band joist? It seems that this would add a significant additional factor of safety.

Mark J. Reinmiller, P.E.
Lansdale, Pa.

Coauthor Frank Woeste responds: Hanger nails are typically 1.5 inches long and have a larger diameter than normal. Look for an N10 in the Simpson catalog. If you use a smaller-diameter nail, you have to reduce the hanger rating per the manufacturer's literature.

I understand the point you are getting

at, assuming the nails were longer, but any increase in the safety factor would be uncertain, especially since you are mixing fasteners (bolts with nails). The NDS *does not permit mixing, even though it is common in some applications.*

Shredded Framing

To the Editor:

As a custom sales rep for the leading materials supplier in Key West, I deal with hurricane-rated products on a daily basis and would like to pass on some observations to code writers, code enforcers, and manufacturers of tie-downs. A mistake that I see almost daily is carpenters putting joist hanger nails in every available hole of every strap, tie, or anchor. As a consequence, the 2-by framing members are shredded, compromising the capacity of the metal connector. This issue needs to be addressed before the next big blow from the Caribbean.

Fred Leake
Manley DeBoer Lumber
Key West, Fla.

Proctor Test Explained

To the Editor:

The answer to the question regarding the compaction of gravel (*Q&A*, 2/04) suggests that a "Proctor test" be performed. However, this is only part of the answer; a Proctor test alone will not determine the compaction of the in-place gravel (or soil).

The Proctor test determines the theoretical maximum dry density for the gravel (or soil) being compacted. This test is normally performed in a laboratory (but can be performed in the field) on a sample of the gravel or soil. The standard Proctor test (ASTM D 698) is probably the most common, while the modified Proctor (ASTM D 1557) is also frequently used. Both tests determine the density of the soil over a range of moisture contents using a standard amount of compaction energy. Using the results of a series of tests (at different moisture contents), the theoretical maximum dry density is determined.

The next step in determining the in-place compaction of the gravel (or soil) is to perform an in-place field density test. This was not mentioned in the answer to the question about compaction. Several test methods are available to determine in-place density, using different equipment. The nuclear gauge method is probably the quickest (and may be the most common), but others, such as the sand cone method, are used.

Once the in-place density is determined, it is compared to the theoretical maximum dry density from the Proctor test. The result (the compaction) is usually expressed as a percentage of the Proctor value. The proper compaction percentage depends on the actual use of the gravel or soil material. Structural fill under a foundation generally requires a higher percentage of compaction than backfill against a foundation wall. For gravel used as a base for driveways or basement slabs, 95% compaction (based on the standard Proctor, ASTM D 698) should normally provide very good results.

Joseph D. Shuffleton, P.E.
Engineering and Technical Consultants
Sterling, Va.

Blames Unskilled Labor

To the Editor:

Hats off to the New Jersey State Commission of Investigation and the *Orlando Sentinel* for exposing the quality, or rather the lack thereof, in many homes being built today (*In the News*, 2/04). Not only are the tradespeople who build these McMansions "unsupervised" and "unskilled," but they are often poorly paid. It is no coincidence that more and more of these workers are coming from Mexico, Central America, and eastern Europe. Contractors have found a gold mine of cheap labor: workers who may work very hard but do not understand local codes or best practices and very often cannot thoroughly read drawings or specifications. Combined with time pressure applied by their employers, this is not a recipe for high-quality work....

Kenneth Susinka
Elmhurst, Ill.

Septic Design Clarification

To the Editor:

After reading the article "On-Site Septic for Problem Soils" (3/04), I want to clear up some misleading statements. I am a Vermont-Registered Professional Engineer and also certified as a Licensed Designer for septic systems. I operate a general contracting business that performs septic installations of all types.

The author states that the usual solution for dealing with poor soils and small lots is a pressurized septic system instead of a gravity one. He also states that "there are technologies that make it possible to install a conventional gravity-supplied system on many lots where pipe and stone are unsuitable." Both statements are incorrect.

We design septic systems to perform their job for a long time. To do this, we must assess the assimilative capacity of the site and evaluate the limiting factors for operation of the system, such as shallow depth to the seasonal high groundwater table, shallow depth to bedrock or impermeable soils, small lot size, and excessive slope. When these factors are present, we must design a system to accommodate the limitations within the requirements of the current state rules.

We are required to install the leach field portion of the system with adequate vertical separation between

both the seasonal high groundwater table and bedrock (or impermeable soils). If either is present at too shallow a depth, the system must be raised to maintain the required vertical separation. Standard in-ground construction techniques can be used if conditions allow. The next step up is to place the disposal field "at grade" or right on top of the ground. The last step up is to place the disposal field in a sand "mound." Each option provides additional vertical distance for separation from these limiting factors. The leaching chambers described in the article can only function in place of a standard in-ground system. They do not provide any additional benefit to sites with shallow depth to groundwater or ledge.


On-Site Septic
FOR PROBLEM SOILS

Pressure dosing is required for at-grade systems and mounds. It can be accomplished either by pumps or by siphon chambers if adequate elevation head is available. Pressure dosing may also be required if an in-ground system cannot be sited in a location that is lower than the septic tank. It is generally accepted that pressure dosing is superior to gravity distribution. Pressure dosing evenly distributes septic tank effluent throughout the disposal field in "doses." This ensures that the entire field is used, not just a portion. The doses are designed to let the field "rest" in between. If a plumbing fixture is leaking, a gravity field will receive a constant drip-drip-drip of water, and the inlet end of the field can become overwhelmed. With a dosed system, the field is evenly dosed and still has a chance to rest in between. I agree that pumps add a degree of complexity and potential failure to a system; however, the ability to evenly dose the entire field in a controlled manner outweighs the costs in many instances.

I believe that the statements made about the general mode of operation of the Infiltrator chamber to also be inaccurate. The leach field chamber, similar to the stone in a conventional trench, only provides a holding area for the effluent. Actual treatment occurs in the unsaturated native soils beneath the field. Once the effluent leaves the chamber or stone, the soil particles provide treatment. The "biomat" described in the article is of limited value. Also, sufficient oxygen is supplied to the bacteria that perform the treatment through the pore spaces in the soil.

A couple of other comments about the system installation as shown in the article: First, I always specify (and the current rules require) that flow equalizers be installed in each outlet of the distribution box to ensure that flow is evenly distributed to each trench line.

Second, I never allow the inclusion of 90-degree bends in any septic lines. All bends must be 45 degrees or less.

Third, we are typically required to have both the septic system designer and the town health officer inspect the system prior to any backfilling. This must always be coordinated during construction. Currently, in Vermont, if you fail to have your wastewater disposal system inspected and certified in writing by the designer during construction, you are left with a defective title on your property.

Finally, I always require that final site grading divert all surface water away from the new disposal field.

I was also intrigued by the Infiltrator leaching chambers when I first learned about them some years ago. However, despite their claimed advantages, they cannot take the place of an at-grade or mound system on a site that requires it.

Thank you for your time. I greatly enjoy reading my copy of *JLC* cover to cover each month. Keep up the great work!

Peter W. Giancola, P.E.
Giancola Construction Corp.
Rutland, Vt.

KEEP 'EM COMING!

Letters must be signed and include the writer's address. *The Journal of Light Construction* reserves the right to edit for grammar, length, and clarity. Mail letters to *JLC*, 186 Allen Brook Ln., Williston, VT 05495; or e-mail to jlc-editorial@hanleywood.com.