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Roofers say tears and granule loss are destroying many 20-year shingles well before their warranties expire.

Early Failures Cited In 20-Year Roofs

Both anecdotal evidence and a study of nearly 100 California roofs suggest that some asphalt-shingle roofs with 20-year warranties are failing before the warranties terminate.

Roy Bolt, a roofing contractor with McDonald and Wetle Inc., a Portland, Oregon, roofing contractor, and chairman of the residential technical and research committee of the Western States Roofing Contractors Association, has talked

tractors and other industry people all over the country who have experienced or know of the same problem.

"This is not a matter of isolated instances," says Tippet. "It's a nationwide problem."

Substandard shingles. The problem, says Tippet, crops up not in all 20-year shingles, but mainly in those that do not meet the American Society of Testing and Materials (ASTM) standard for 20-year shingles. That standard calls for the notches in three-tab shingles to withstand 1,700 grams of pressure before tearing. But in an effort to save money on materials, says Tippet, some makers are making lightweight shingles that tear at 1,100 grams of pressure. On the roof, this weakness means tears often occur less than 10 years after installation.

"The manufacturers call them 20-year shingles even though they don't meet the standard," says Tippet. "They get around it by simply omitting the ASTM standard label."

Lack of asphalt the problem. The problem, says Tippet, seems to be in excessive economizing on materials.

All asphalt-fiberglass shingles are essentially fiberglass mats covered with a protective layer of asphalt, with a layer of ceramic granules on top. Better shingles have more asphalt, especially on the bottom.

According to Tippet, however, the problem 20-year shingles contain too little asphalt, with most of it lying atop the mat. This leaves the fragile

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Mass. Builders Gain in Suit Over Wetlands Fees

The Home Builders Association of Massachusetts (HBAM) recently made headway in its lawsuit against the state Department of Environmental Protection regarding what HBAM counsel Garen Bresnick calls "unjustifiably high" wetland impact fees.

The fees, which are based on the complexity of a project and its proximity to wetlands, are paid by developers to the state Department of Environmental Protection (DEP) when the developer files a notice of intent to build with the local conservation commission. HBAM has argued

that the fees, which Bresnick says average around \$3,000 a project, are in essence an illegal tax, since they do not correspond to the service provided by DEP.

HBAM first filed the suit in late 1989, shortly after DEP changed its flat \$25 notice fee to a sliding scale based on project complexity. The case has been dragging on since then as the two sides exchange information.

Now, says Bresnick, in response to HBAM requests for information in the suit, "The DEP has acknowledged that the typical notice of

intent — the case about 90% of the time — takes a clerical person at DEP less than a half-hour to process. That's all the work they ever do. Only the remaining 10% ever come back for an appeal, which involves inspection of the site and so on. We think the fees ought to relate to the services given. The state should not charge routine filings for all the cases in which further review is necessary."

Bresnick expects the case will be settled sometime early next year. HBAM seeks to have the notice fee restructured, and possibly returned to something close to its former flat-fee structure, with other mechanisms in place for financing the cases that require expensive review. □

Residential Sector Leads Building Rebound

These hard facts were backed up by informal, anecdotal surveys by JLC staff, who found that most contractors we talked to had more, and better, jobs lined up for this summer and fall than last.

"Business is way, way up," said one kitchen and bath contractor who barely made it through 1990. Other contractors who had only a few weeks of jobs lined up at a given time in 1990 had several months lined up in 1991; some had contracts into the winter.

Slow, steady growth predicted. At least one leading forecaster says the building rebound will last. In a forecast for the Home Improvement Research Institute, DRI/McGraw-Hill predicted the construction economy would continue to move slowly but steadily upward, with home improvement spending leading the way.

Home improvement spending, according to the report, will return to its pre-recession levels in 1992. At first, the report predicts, the meat of this increase will come in do-it-yourselfer (DIY) spending, mainly because existing home sales (which lead to many professional remodeling jobs) are expected to remain slow into 1992. But as more homes move in 1993 and afterward, DRI expects spending on professional remodeling to join DIY spending at a 6% annual growth rate. □

Survey Finds Carpenters Sexy; Liz Agrees

Carpentry is the sexiest occupation, according to a survey printed last year by *New York Woman* magazine. The survey found that the magazine's readers — mostly upscale city dwellers — found that "women want a man that leads a quieter and simpler life," according to Helen Rogan, the magazine's executive editor. Rogan claimed she just has to say "carpenter" among sophisticated New York women to make them weak at the knees.

"Women want a man that leads a quieter and simpler life," says Rogan. "Someone who will be around after the greed is gone. Being in touch with wood, now that's sexy. Money isn't."

This may explain actress Liz Taylor's July announcement that she would make construction worker Larry Fortensky her eighth husband. It will be the second marriage for Fortensky, who has known Taylor for four years. According to wire reports, the couple met while both were undergoing treatment at the Betty Ford Clinic substance abuse center in California.

Fortensky will be the first construction worker to wed Liz, whose previous husbands include a hotel magnate, a U.S. senator, and actor Sir Richard Burton (twice). □

The problem shingles contain too little asphalt, with most of it atop the mat. This leaves the fragile underside exposed.

to numerous western contractors who have applied 20-year shingles and then had problems early in the warranty period.

"Some of these things are going as soon as four years after installation," says Bolt.

This anecdotal evidence is supported by a study done by Richard Tippet of Applied Roofing Technology, a roofing consulting firm. Tippet analyzed nearly 100 central California roofs and found significant degradation of 20-year shingles, including granule loss and horizontal, diagonal, and vertical tearing. In addition, he too has talked to roofing con-

From What We Gather

If you could retire anywhere in the United States, where would you go? Based on a survey by the Century 21 Real Estate Corp., most people would choose among the beachfront communities of Boca Raton, Fla.; Maui, Hawaii; Cape Cod, Mass.; Bar Harbor, Maine; or Hilton Head, N.C. The most popular mountain resorts included Aspen, Colo., and Jackson Hole, Wyo.

The South claimed the larger share of the 1990 residential remodeling market, accounting for 28% of the \$106 billion spent, according to recent U.S. Census Bureau statistics. Most of the money was spent in Miami, Atlanta, Charleston, S.C., and West Palm Beach/Boca Raton, Fla.

The phase-out of CFCs from foam insulation products won't compromise R-values, according to industry sources quoted in a recent story in *Roofing/Siding/Insulation* magazine. The phase-out, mandated by the 1990 Clean Air Act, will take place over the next 10 years. Manufacturers say they expect to produce equivalent CFC-free products that cost the same and require the same installation procedures as today's foam insulation products.

People living in wood structures live an average of nine years longer than those in non-wood structures, according to a report

from Japan's Shimane University. The researchers have not yet discovered why.

There are enough dead trees standing in California to build 600,000 three-bedroom homes, according to one estimate. Dried out after several years of drought, the trees pose a significant fire hazard and contribute to the late-summer fires that often plague the state.

Thirty-six states require their contractors to be either licensed or registered, according to NAHB. With 23 of these states considering expanded requirements, and other non-regulated states considering requirements, regulation of contractors is expected to continue growing during the 1990s.

Air conditioning consumes 13% of the nation's electricity, according to the Edison Electric Institute in Washington, D.C.

The use of concrete on the moon is the subject of *Lunar Concrete*, a symposium volume containing 20 technical papers from "well-known authorities on lunar concrete," according to *Concrete Quarterly*, a newsletter of the American Concrete Institute. The papers weigh the fine points of forming, reinforcing, placing, and otherwise working with concrete in the moon's low gravity. How's that slump test going? □

Failures,
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fiberglass underside exposed to the abrasive ceramic granules of the shingle beneath. As the shingles expand and contract with temperature changes, these granules wear the overlying mats thin.

This situation is aggravated, says Tippet, by "over-aggressive" self-sealing adhesive tabs. The firm anchors created by these tabs, as well as by nails or (especially) staples, create more stress than the thin shingles can handle as they expand and contract.

Most owners gone before failure. So how can manufacturers continue to sell shingles that don't appear to meet their 20-year promise?

Most shingle warranties can't be transferred: four out of the top six 20-year shingle makers state that their guarantee is valid only for the original homeowner. With the average length of home ownership now around six years, most homeowners are gone, and their warranties worthless, before the roofs start to fail. Thus many failures that might otherwise be claimed under warranty cannot be.

Warranty claims that are made are generally compensated on a pro-rated basis. By the tenth year, most companies will compensate for less than one-third (adjusted for inflation) of the roof's original material cost. The roofer or contractor must pick up the rest of the replacement cost.

Problem may grow. So far, says Tippet, most homeowners have accepted these settlements, or, if they press for more, settle out of court. But he believes that growing pressure from roofing contractor associations and other groups may bring greater

responsiveness in the next couple of years.

He says there is also talk of revising the ASTM standard. One option is to make the standard both prescriptive (regarding amount of materials) and performance-based (regarding strength and flexibility tests). Another is to sim-

ply return to a weight standard, where shingles are rated according to their weight per square.

Meanwhile, says Tippet, contractors and roofers should protect themselves by buying shingles that, at minimum, meet the ASTM standard for 20-year shingles. — *Jim Hart*

Tax Talk

The Owner-Expense Deduction Trap

by Irving L. Blackman

As a business owner, it is important that you keep your own expenses separate from your company's. But now and then, every business owner ends up paying business expenses out of personal funds, either directly or through use of a personally owned vehicle.

For tax purposes, it's tempting to just take a deduction for a non-reimbursed employee expense (since every business owner is also an employee) on your personal return. This saves you having to apply for, and receive, compensation for the expense from the company account, and gives you an extra deduction on your personal return.

Unfortunately, the IRS doesn't allow it, as illustrated by this sad but true story:

Fred owned 15% of VDS, his employer. He often drove his personally owned car on company business. He did not seek reimbursement from VDS for his driving, however, even though he always asked for, and received, reimbursement for other travel expenses. Instead, Fred deducted his

driving expenses (including depreciation) on his personal tax return as an unreimbursed employee business expense.

These expenses would have been fully deductible on VDS's return, had it paid Fred for them. But the IRS disallowed the deductions on Fred's return, as did the tax court where Fred appealed. The court explained that when an employee fails to request reimbursement that would likely be granted, the expense is presumed to be personal. Result: no deduction. In other words, the law is clear: You cannot convert a company expense into a personal business expense by not seeking reimbursement.

Fortunately, it's easy to avoid this tax trap. Even if you're the sole owner, just ask for, and always accept, reimbursements for company expenses that you pay yourself or incur by use of your personal vehicles or equipment. □

Irving L. Blackman, CPA, J.D., is with Blackman Kallick Bartelstein, 300 S. Riverside Plaza, Chicago, IL 60606.



Building Blocks for Adults

If you find yourself lying on the floor for hours after the kids have gone to bed building intricate structures with their wooden blocks, you'll be interested to know there are now wooden blocks made for grown-ups. Archiblocks are available in different architectural styles, including Greek Revival, Medieval, Victorian, Russian, and postmodern. The components include things like domes, arches, lintels, and Doric columns. Made from maple, they range in cost from \$16 for a simple set to \$338 for the 107-piece Russian set, which includes brass crosses and onion domes. Archiblocks are available at specialty stores and museum shops, or from their maker, Bower Studios, 76 Main St., Vergennes, VT 05491; 802/877-6868. □

Experts Describe "House of the Future"

What will houses look like 10 years from now? Based on a survey of architects, builders, and marketing consultants conducted by the National Association of Home Builders, they'll look much like homes being built today, but with a few key differences.

The "house of the future" will be a two-story colonial with two master bedrooms, one on each floor; the extra one is for guests. It will feature a media room, an exercise room, a large kitchen, and larger closets. The house will also have two full baths and two half-baths. In most cases,

the house will include an office.

- The survey also says:
- Home sizes will increase from the current average of 2,000 square feet to more than 2,300 square feet.
 - Typical lot sizes will vary in different parts of the country. But higher densities will be more common. For instance, in metropolitan areas, more homes will be built on zero-lot-line sites, with one wall of the home on the lot line.
 - Kitchens will become even more important and more luxurious. They will have more counter space and cabi-

netry, built-in microwaves and other small appliances, larger windows, and more skylights.

- The majority of ceilings will be 9 feet instead of 8 feet.

Builders will also change the way they work, the survey says. More will rely on computer-aided design to provide flexibility for themselves and for purchasers. Use of manufactured components will increase as less on-site labor is used. Finally, they'll be installing more home automation systems, including computerized lighting controls, energy management, and security systems. □

Remodelers Get Passive Solar Guidelines

Designing and building to either encourage or discourage passive solar heat gain can cut energy bills up to 50%. But trying to do so on a remodeling project, where you're limited by the home's orientation and architectural style, can sometimes be challenging indeed.

Remodelers trying to meet this challenge can now turn to a new book of solar design guidelines published by the Passive Solar Industries Council (PSIC). "Remodeling Guidelines for Conserving Energy at Home" covers the basics of passive solar, and also provides formulae for calculating heat loss

and solar gain. You can also get accompanying software, called BuilderGuide.

The book, which was developed by PSIC in conjunction with the National Association of Home Builders' Remodelers Council and the National Association for the Remodeling Industry, uses a 1,500-square-foot case study house on which an 800-square-foot addition is planned. Through a series of worksheets, remodelers learn how to judge window sizes and locations, the size of overhangs, appropriate window treatments (shades or shutters, for instance), and the best size and

location of thermal mass to allow maximum heat gain or avoidance.

"The case study is a typical ranch house," says Helen English, executive director of PSIC. "The idea is that any house, even something as mundane as this ranch, can be designed to maximize solar gain."

PSIC also has a similar workbook for new homes, called "Passive Solar Design Strategies: Guidelines for Home Builders." For more information on either workbook or on workshops on passive solar design, contact the PSIC at 1090 Vermont Ave., N.W., Suite 1200, Washington, DC 20005; 202/371-0357. □

New England Radon Legislative Update

Radon has gotten its share of attention over the last few years, and nowhere more than in New England, where up to 25% of homes have levels above the EPA "action level" of 4 pCi/liter of air.

This has led to numerous pieces of legislation in New England states. Many of these bills have failed, some have passed, and some are presently under consideration. Some of the bills most relevant to contractors include:

Connecticut. Connecticut's Public Act 91-321 sets certification standards for companies who test for or mitigate radon levels in homes. Mitigation company employees must pass the EPA's Radon Contractor Proficiency Exam, while testing company workers must pass the EPA's Radon Measurement Proficiency Program.

The act also establishes a home guaranty fund. Fed by registration fees paid by testing and mitigation companies, the fund compensates homeowners who win grievances with radon testing or mitigation companies but aren't able to collect payment.

Proposed laws in Connecticut include one requiring

seller-funded radon testing and disclosure in real estate transactions. Such legislation has been introduced before in Connecticut, but was defeated by heavy pressure from the real estate industry.

Rhode Island. Rhode Island law requires real estate sales contracts to hold a clause stating that radon is a problem in the state, and that testing is advisable.

However, Senate Bill 90 S 2845, likely to be considered again this year, would establish a state radon program that would: test all buildings except owner-occupied one- and two-family dwellings; publicize the radon problem more heavily; recommend radon-related changes to the State Building Commission; and require licensing and certification of all mitigation and testing services. Few people feel the bill has much chance of passing, however, due to the state's severe fiscal problems.

Massachusetts. No radon-related laws presently exist for residences. House Bill 2538 would mandate seller-funded testing and disclosure of radon levels for all houses being sold. Massachusetts is a state gener-

ally friendly to such pro-consumer regulation, but the bill faces tough opposition from the real estate industry. The state code already requires a similar standard in public and state buildings.

New Hampshire. Beginning this year, New Hampshire requires the seller of any building to give the buyer an acknowledged written notice that radon is found in some areas of the state. The notice merely states that the possibility of a problem exists, and that testing can detect it. It does not mention any health risks, and there is no penalty for failing to notify the buyer.

Vermont. At this point, Vermont has no radon legislation either on the books or in the works.

Maine. Maine has the region's toughest radon regulations. The Radon Registration Act, which became law in March 1990, requires registration of testing and mitigation services and certification of testing devices by approved labs. The registration fees go into a fund to support radon-related research and educational activities.

In addition, listing brokers must specifically ask a seller whether he or she knows of any radon in the property. If so, that information must be given in writing to any buyer

before or during an offer. The law does not require the seller to test.

Pressure for action may ease. Most of these laws were passed or introduced in the wake of the EPA's heavy public education program on radon in the late '80s. This program, which stressed an "action level" of 4 pCi/liter (a level exceeded in many homes across the country, including the White House) and equated levels above that with pack-a-day smoking habits, generated much press. The EPA estimated that radon caused 30,000 deaths per year from lung cancer.

This harsh view of radon's danger is presently being tempered. Stories in magazines ranging from *Indoor Air Review* to *Science* to *Time*, for instance, have questioned the EPA's stance. And a recent report from the Health Physics Society cited wide disagreement among scientists and suggested that a more reasonable action level would be 100 pCi/L — a level that would dramatically decrease the number of homes with levels considered hazardous. If such opinions gain more weight in the debate, the pace of new state radon regulations may taper off or even reverse itself. □

FRT Plywood: Not All Went Bad

Only four FRT products are currently used for roof sheathing, according to a study by the NAHB National Research Center. Since litigation opened up over FRT plywood failures, many products have been discontinued. The "new generation" products include *Dricon*, manufactured by Hickson Corp., *D-Blaze*, manufactured by Chemical Specialties Inc., *Flameproof LHC HTT*, manufactured by Osmose Wood Products, and *PyroGuard*, manufactured by Hoover Treated Wood Products.

To date, no failures have been reported with any of these. None of these products are made with monoammonium phosphate, a compound the Forest Products Lab previously found to have the greatest incidence of failure at high roof temperatures. The NAHB report notes that only two of the products — *Dricon* and *D-Blaze* — have significant histories of performance in the field. *Dricon* has been in use since 1982, and *D-Blaze* since 1985. The Hoover and Osmose products were made available in 1988 and 1989, respectively. □