

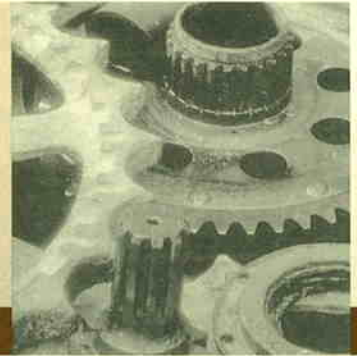
The Consultant

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SEAL Corporation Spotlights New Members Of Our Staff

Please help us in welcoming the two newest members of our staff. These gentlemen bring with them a great deal of experience and will definitely be an asset to our team. We hope you will find them to be just as valuable and look forward to meeting them.

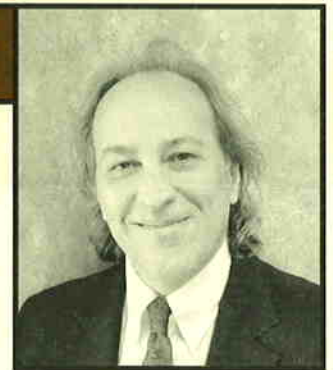


Forensic and Consulting Engineer
Greig Latham, P.E.

Holding a Bachelor of Science degree in electrical engineering from Texas A&M University, Greig brings to us 20 years of engineering experience. Greig also served 12 years in the United States Army Reserve and TXARNG. He is currently a licensed engineer, as well as a private instrument pilot. Some of his consulting areas include failure analysis and forensic investigation of fire related failures, electrical and electronic failure analysis.

Computer Modeling Specialist
Hank Gatewood

Hank comes to SEAL Corporation with approximately 14,000 hours of computer modeling and digital animation/reconstruction, scientific forensic reconstruction and freelance experience. Using various softwares, such as 3D Studio Max, Rhino, Lightwave, Photoshop, Illustrator, Auto CAD and HVE-3D, Hank can provide visual simulations of a variety of situations ranging from vehicle accidents to material and product failures.



Continuing Education Courses

SEAL Corporation is currently giving State Board of Insurance approved CE courses. These courses are available "in-house" to claims managers or legal staff who may benefit from the information.

Please call 1.800.624.0905 to reserve a course(s) for your company. Please allow four (4) weeks advance notice in order for SEAL Corporation to make arrangements to have the appropriate engineer available.

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System Engineering And
Laboratories Corporation is
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engineering and investigative
consulting firm.

Could Excess Moisture Be Ruining Your Flooring?



Excess moisture damage to concrete sub flooring.

Floor manufacturers recognize that excess sub floor moisture can effect flooring and adhesive performance to concrete or wood sub flooring. However, not all floor suppliers or installers know of or pay attention to this potential problem. Moisture problems can effect carpet, wood, laminated synthetic wood, linoleum, vinyl, tile and most other flooring commonly used in residential or commercial construction. The excess moisture can result in warping, rot, mold, discoloration and latex adhesive bond failure, as well as causing latex adhesives to seep through the seams in flooring. The adhesive oozing through the seams dries and becomes tacky. Normal floor dirt will adhere causing dark discoloration paralleling the seams and joints of the flooring.

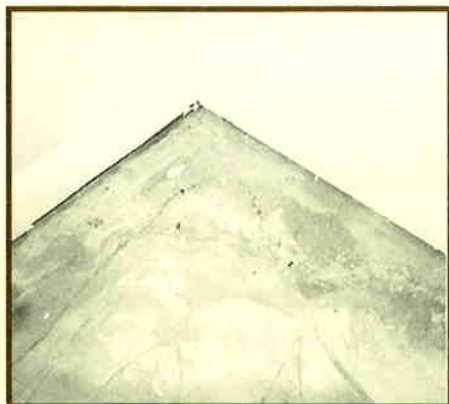
Excess moisture can come from sources such as new concrete, plumbing leaks, spills, poor surface drainage, surface runoff, inadequate vapor barrier, direct rainfall when a roof is compromised or from water applied during a fire. Freshly poured concrete contains water critical to the curing and hardening of concrete. Concrete continues to cure even several months after it is poured. During the ongoing curing process, moisture trapped beneath flooring laid too soon can continue to be released from the concrete. Increased amounts of water can be trapped in new concrete when it is exposed to rainfall prior to final enclosure with a roof. Plumbing leaks above a floor or

"The excess moisture can result in warping, rot, mold, discoloration and latex adhesive bond failure..."

beneath a foundation in the water supply or drain system can contribute to excess moisture beneath flooring. Poor surface drainage around a foundation perimeter can allow water migration beneath a house or direct surface runoff entry. Lack of proper vapor barrier beneath a concrete slab foundation can result in soil moisture migration. When a roof has been compromised by natural deterioration of the roof membrane through age, or compromised by storm damage or fire, direct rainfall can add moisture to the sub flooring. Oftentimes when a structure fire occurs, significant quantities of water are applied to the building during the firefighting process. Such water can accumulate on the flooring and soak into the foundation. Once moisture is absorbed in a concrete or wood foundation, the rate it resurfaces beneath a floor is controlled by environmental factors such as temperature, pressure and humidity. Furthermore, application of a finished floor, too soon after one of the above situations has occurred, will oftentimes result in flooring problems in the future.

There will always be some moisture due to normal environmental conditions, but what is considered too much moisture? Many of the leading floor manufacturers in the United States are members of the Rubber Manufacturers Association (RMA). The RMA has established requirements for moisture content in sub flooring at three pounds per thousand square feet surfacing from a floor in a twenty-four hour period. At or below this level, floor adhesive can cure adequately to form a bond between the floor and covering. A calcium chloride quantitative moisture test is utilized to measure sub flooring's moisture content to compare to this established standard, or to those specified by the manufacturer. The test consists of placing a known quantity of calcium chloride granules in a dish on the floor under an airtight chamber. The granules absorb the moisture evaporating from the surface of the sub flooring beneath the chamber. The test is run for sixty

to seventy-two hours. The relative weight gain of the calcium chloride indicates the amount of moisture absorbed. Based on the results and a formula, you find the amount of water evaporating from a thousand square feet of floor space. At least three such tests should be run in different areas of the home to assure the drying process has reduced the moisture content to an acceptable level. If moisture problems persist, it may be advisable to apply a sealer over the concrete floor prior to reinstallation of flooring. When excess moisture problems are evident at the home, some types of flooring may not be the most desirable selection, such as synthetic wood laminate or other porous type materials.



Mineral deposits from excess moisture in sub flooring.

A knowledgeable floor supplier and installer should know excess moisture is a potential problem, based on experience and reading of manufacturer literature. Frequently, if not always, excess moisture in the sub floor is addressed in literature supplied from the manufacturer with flooring material and adhesive installation instructions. Even if the instructions are not specific, they usually mention the need for no excess moisture and a dry surface. Instruments are available for quick spot tests, such as the Delmhorst Moisture Detector, Model BD-7. The calcium chloride test is not extremely expensive, but can take several days to run and then get results.

Presenting 3-D Scientific Visualization Of Your Accident Reconstruction

Computer modeling to analyze vehicle accidents is not new. It was started decades ago by the federal government. Private enterprise has built on the government research to establish more user compatible programs for the modern desktop personal computer. Recent advances in the personal computer industry have allowed more flexibility and greater variable analysis in shorter periods of time. This includes enhanced graphics to help visualize scientifically the results of complex physics-based mathematical calculations that include drive throttle, braking and steering inputs. Tire, road surface, vehicle stiffness, engine, transmission and other parameters are considered and can be modified for specific passenger and commercial vehicles. Part of the process is the need for readily available vehicle models that include the physical characteristics and visual geometry of the desired vehicle.

SEAL Corporation started in the computer accident reconstruction over 15 years ago. Over the years, we have continued to invest in state-of-the-art programs to keep current. Towards the end of last year, SEAL

was involved in beta testing a program called Human Vehicle Environment (HVE) by Engineering Dynamics Corporation (EDC). We became one of the first users of the PC-based version. This year we acquired a vehicle model library that includes thousands of makes and year models, so that they would be readily available for client projects. Although this library does not include every foreign and domestic vehicle, it covers many of the most common vehicles, motorcycles, semi-trucks and semi-trailers. When necessary, SEAL can create custom vehicles using our in-house graphics department. We have created dozers, concrete barriers, crash attenuators and even an oilrig, just to name a few.



Simulation of an oilrig reconstruction.

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