



Revisiting field uplift testing

NRCA's long-standing concerns continue with this issue

by Mark S. Graham

It has been a while since I have written about NRCA's concerns with field uplift testing, which sometimes is inappropriately used as a way to assess the quality of an adhered membrane roof system installation. Despite the time that has passed, NRCA continues to have reservations about field uplift testing, and the test procedure has not yet been revised to address NRCA's concerns.

ASTM E907

In 2013, ASTM International withdrew its consensus-based test method for field uplift testing, ASTM E907, "Standard Test Method for Field Testing Uplift Resistance of Adhered Membrane Roofing Systems."

ASTM International requires its test method standards to include a precision statement addressing two things:

- Known within-laboratory variability, referred to as "repeatability"
- Relative variability of test results obtained from different laboratories, referred to as "reproducibility"

Test methods also are required to include an estimate of bias in test results.



ASTM E907 has lacked adequate precision and bias statements since it originally was published in 1983, and this is one of the reasons ASTM International withdrew the test method in 2013.

An updated and revised version of ASTM E907 currently is being developed. ASTM's Committee E06 on Performance of Buildings previously was responsible for developing and maintaining ASTM E907 until it was transferred to ASTM Committee D08 on Roofing and Waterproofing in 2011. An ASTM Committee D08 task group responsible for the new version of ASTM

E907 is conducting an interlaboratory study program to attempt to develop accurate statistical data that will result in precision and bias statements. NRCA is participating in this interlaboratory study program.

Once finalized and approved by the ASTM Committee D08 on Roofing and Waterproofing, the new version of ASTM E907 will be published with a new designation; the previous ASTM E907 designation will not be reused.

Until the new version of ASTM's field uplift test method is published, the withdrawn version can be used.

FM 1-52

FM Global Property Loss Prevention Data Sheet 1-52, "Field Verification of Roof Wind Uplift Resistance," is FM Global's nonconsensus-based method for performing field uplift testing on FM Global-insured buildings in hurricane-prone regions.

FM 1-52 last was revised in July 2021. With this revision, FM 1-52's scope clarified the test method can be used to assess existing roof systems for adequate wind resistance but not to determine the cause of wind-uplift damage after a storm event.

Reportedly, this change was made by FM Global after several of its insured clients had FM 1-52 field uplift testing performed on their aged, existing roof systems and found the tested uplift resistances were lower than their roof systems' FM Approvals' classifications. These building owners attempted to file insurance claims with FM Global based on the roof systems having experienced uplift damage.

Interestingly, FM Global's scope change to FM 1-52 contradicts the specific reason why the field uplift test method was originally developed: Roofing contractors during the late 1960s and early 1970s were looking for a way to assess the extent of roof damage following Midwestern thunderstorms and localized high winds.

Whether the specific roof systems in these FM Global claims situations were storm-

damaged or the differences are attributable to a lack of correlation between FM Approvals' classifications and field uplift test results' variations in test method procedures or known variations in field test method results is unknown.

NRCA recommendations

NRCA maintains its long-standing position that field uplift testing is inappropriate for

use as a post-installation quality assurance measure for adhered membrane roof systems.

NRCA maintains the best, most reliable means of assessing the quality of a newly installed membrane roof system is through continuous observation of the application at the time of installation by a knowledgeable roofing professional. NRCA's *Quality Control and Quality-assurance Guidelines for the Application of Membrane Roof Systems* is meant specifically for this purpose.

NRCA encourages roofing contractors and manufacturers to consider avoiding projects where field uplift testing is indicated in construction documents as a basis for acceptance of roofing work. A roof system's ability to pass wind-uplift tests and meet designated uplift pressures depends on numerous factors; a roofing contractor's installation is just one.

If field uplift testing is being conducted but was not specifically called for in construction documents, you should go on record with your concerns regarding field uplift testing. You can use a copy of this column and other documents NRCA has published about field uplift testing as support.

You also should clearly stipulate your entitlement to final payment should not depend upon successful field uplift testing. Also, unauthorized field uplift testing (similar to any unauthorized roofing work) may void contractors' and manufacturers' guarantees.

I encourage NRCA contractor members to share their field uplift testing experiences and direct any questions regarding field uplift testing to NRCA's Technical Services Section at (847) 299-9070, option 4, or nrcatechnical@nrca.net. 📞📧📱

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For an article related to this topic, see "Assessing application," October 2017 issue.



NRCA's Industry Issue Update, "Field-uplift testing," published in June 2015, provides additional information and guidance, including suggested proposal and contract language, specific to field uplift testing. You can access it at professionalroofing.net.

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Pilot project uses mushrooms to decarbonize construction waste

Lendlease, New York; Mycocyte, Bolingbrook, Ill.; Rockwood Sustainable Solutions, Lebanon, Tenn.; and Rubicon Technologies Inc., Lexington, Ky., have announced the success of a partnered pilot project involving used asphalt shingles, mushrooms and mycoremediation technology to reduce construction waste.

According to the Environmental Protection Agency, 11 to 13 million tons of asphalt shingles end up in landfills each year. After seeing the large amount of waste generated by asphalt roofing shingles from a recent reroofing project at the Fort Campbell Army installation in Kentucky, the four companies proposed a solution to reuse the material in a new capacity.

“Every asphalt shingle from those 214 homes would have gone to a landfill,” says Sara Neff, head of sustainability at Lendlease Americas. “There was simply no viable use for them. We understand the importance of reducing our Scope 3 carbon by diverting waste streams from the landfill. After teaming up with Rubicon Technologies, Mycocyte and Rockwood Sustainable Solutions, we came up with an innovative idea using mycoremediation technology—combining mushrooms and shingles to break down waste materials and create a new byproduct that could ideally be reintroduced for reuse, furthering a circular economy.”

Shingle samples were gathered and transported to Rockwood Sustainable Solutions’ facility in Lebanon where Mycocyte, an environmental remediation company that uses fungi to decarbonize waste streams, performed what is believed to be a first-of-its-kind study, mixing the samples with three strains of fungi, a process called mycoremediation.

“Using mycoremediation to process waste so as to be further recycled and form part of the circular economy is its highest use,” says Joanne Rodriguez, founder and CEO of Mycocyte. “Our mycelium recycling pilots continue to see excellent results among a wide range of materials.”

Project team members presented the results of the project at the Greenbuild International Conference + Expo in San Francisco Nov. 1, 2022.

The team now is encouraging manufacturers in the building industry to continue to focus on the effect these new materials can have on reducing emissions while making the supply chain more sustainable.



To watch a video about the mycoremediation project, go to professionalroofing.net.

Many organizations have had recent cloud-related security incidents

More than 80% of organizations have experienced a cloud-related security incident during the past year, according to a study from Salt Lake City-based cybersecurity company Venafi. Almost half of the organizations reported at least four incidents during the same period. The organizations are based in a variety of international markets, including Australia, Belgium, France, Germany, Luxembourg, the Netherlands, U.K. and U.S.

Companies rapidly are adopting cloud-based applications. Organizations in the study currently host two in five applications in the cloud, and that number is expected to become three in five during the next 18 months.

More than half of all organizations in the study said they consider the risk of security incidents higher in the cloud compared with on-premises environments.

Operational and security concerns that emerge from moving to the cloud include hijacking of accounts, ransomware, data privacy issues and nation-state attacks.

Organizations most commonly encountered security incidents during runtime, unauthorized access and misconfigurations. All were cited by about one-third of respondents.

“Attackers are now on board with businesses’ shift to cloud computing,” says Kevin Bocek, Venafi’s vice president of security strategy and threat intelligence, in a blog post. “The ripest target of attack in the cloud is identity management, especially machine identities.”

