

Getting closer to gutters

NRCA tests metal roof edge gutters and maintains certification programs

by Mark S. Graham

NRCA has conducted testing of metal roof edge gutters according to ANSI/SPRI GT-1-2016, “Test Standard for Gutter Systems.” If you design, shop fabricate and/or install gutters for low-slope membrane roof systems, you should be aware of ANSI/SPRI GT-1, the building code requirement that requires gutter testing, and NRCA’s gutter testing and certification programs.

ANSI/SPRI GT-1

ANSI/SPRI GT-1 provides a methodology for testing static load resistances of exterior hanging gutters used with low-slope roof systems. Gutter resistances are tested in three directions as shown in the figure.

Test G-1 tests a gutter’s resistance to a horizontal outward load, such as an outward wind load. Test G-2 tests a gutter’s resistance to a vertical upward load, such as an upward wind load. Test G-3 tests a gutter’s resistance to a downward load, such as the weight of water, snow and ice.

The test method does not assess a gutter’s water-carrying capacity or water removal.

ANSI/SPRI GT-1 was developed and is promulgated as a national



consensus standard by SPRI Inc. The test standard can be downloaded for free from spri.org.

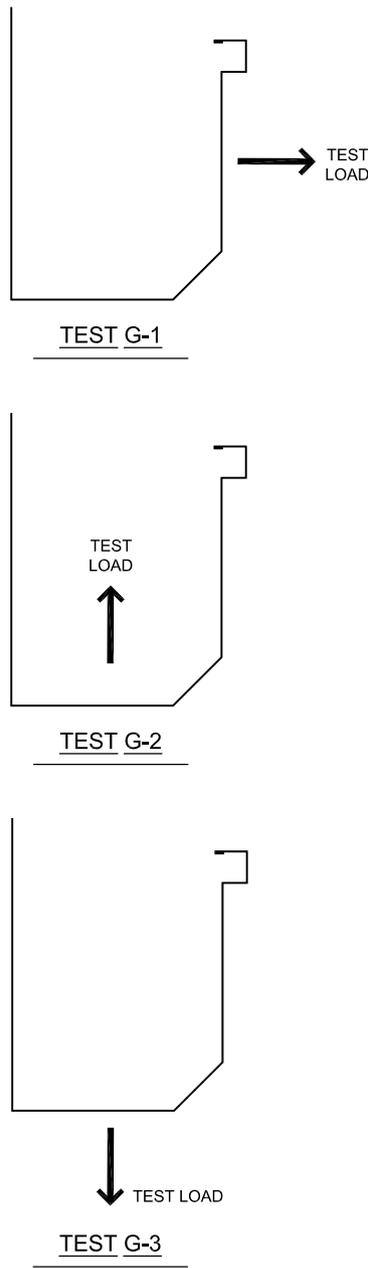
Code requirement

The *International Building Code*,[®] 2021 Edition, includes the following requirement specific to gutters: **“1504.6.1 Gutter securement for low-slope roofs.** Gutters that are used to secure the perimeter edge of the roof membrane on low-slope (less than 2:12 slope) built-up, modified bitumen, and single-ply roofs, shall be designed, constructed and installed to resist wind loads in accordance with Section 1609 and shall be tested in accordance

with Test Methods G-1 and G-2 of SPRI GT-1.”

The code requires gutters’ tested resistances to be greater than their buildings’ design wind loads, which typically are determined using ASCE 7-16, “Minimum Design Loads and Associated Criteria for Buildings and Other Structures.” The code doesn’t specifically require a safety factor be applied to tested resistances; however, use of a safety factor of 2.0 is good practice when using the allowable stress design method.

The code’s gutter testing requirement is more limiting than ANSI/SPRI GT-1’s scope and specifically applies to exterior perimeter edge gutters used with built-up, polymer-modified bitumen or single-ply membrane roof systems installed at less than 2:12 slope. Also, ANSI/SPRI GT-1’s GT-3 downward resistance test does not apply to the code’s requirement.



ANSI/SPRI GT-1 test configurations

NRCA testing and certification

NRCA has tested a limited number of gutter profiles and materials using ANSI/SPRI GT-1.

NRCA tested five, Style D exterior 6- and 8-inch-wide gutter profiles fabricated from galvanized steel and aluminum using exterior gutter brackets or internal stiffeners depending on gutter size and material.

The results of NRCA’s testing are provided in the shop-fabricated edge metal flashings section of nrca.net.

NRCA also has obtained and maintains third-party certifications for compliance with ANSI/SPRI GT-1 by UL Solutions and Intertek Testing Services based on this testing. Additional information about these certifications is available in UL’s Product iQ[®] and Intertek Testing Services’ SpecDIRECT[™] applications, respectively.

Closing thoughts

NRCA is conducting additional testing and maintains its UL and Intertek Testing Services certifications to provide roof system designers with baseline data and fabricators and installers a means of complying with IBC 2021’s requirements for gutters.

Additional information about shop-fabricated architectural metal flashings, including gutters, is provided in the Architectural Metal Flashing Section of *The NRCA Roofing Manual: Architectural Metal Flashing and Condensation and Air Leakage Control—2022*, which can be purchased or is available as a free member download at shop.nrca.net. 📶🔗



For links to NRCA’s gutter testing results, UL’s Product iQ[®] and Intertek Testing Services’ SpecDIRECT[™] applications, go to professionalroofing.net.

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CPWR warns of safety concerns regarding drone use in construction

Researchers from CPWR—The Center for Construction Research and Training recently analyzed the behaviors of 153 participants with construction experience in a virtual construction site regarding drone use, according to safetyandhealthmagazine.com.

The study's findings show working with or near drones "reduces the attention workers devote to the task at hand, which could result in falls when they are at height." Workers operating while drones were 12 feet and 25 feet away looked away from job tasks more frequently than when drones were 1½ feet and 4 feet away.



Access the CPWR study at professionalroofing.net.

Researchers also found working with drones at any distance contributes to significant psychological and/or emotional distress because workers

may feel they are constantly being monitored and fear being struck by a drone as they work in high-risk environments at height.

To help ensure safe use of drones in construction, CPWR advises employers to:

- Train workers, especially because there currently are no specific Occupational Safety and Health Administration guidelines regarding use of drones on construction sites. It is key to educate workers about drones and familiarize them with working alongside drones, and CPWR suggests virtual reality training.
- Design drones to limit the frequency and severity of risks they pose to workers and minimize crash impact.
- Prepare job sites to ensure drones work efficiently and safely around workers, accounting for factors such as drone size and shape, flight path and weather conditions.

CPWR also suggests scheduling tasks so employees are not working in areas in which drones are operating and only using drones for operations that provide significant benefits compared with traditional work methods.



Half of companies lack budget necessary to mitigate cybersecurity risks

A recent study conducted by the Neustar International Security Council, Reston, Va., revealed only about half of companies have the budgets necessary to meet current cybersecurity requirements, according to constructiondive.com. Conducted in autumn 2022, the survey involved 304 senior professionals in the U.S., Europe, the Middle East and Africa.

Less than one-third of IT and security professionals said their cybersecurity budgets would remain the same in 2023 and 6% of respondents expect their budgets to decrease. Of those, 44% said the budget stagnation or cuts will expose their businesses to more cyber risk, the study showed.

More major businesses in the U.S. and abroad are cutting budgets because of the uncertain economic environment. High-profile companies including Alphabet, Amazon and Microsoft have recently announced thousands of job cuts.

"Macroeconomic issues are driving down spending across all sectors, and the way a lot of leaders are handling it is by cutting across all programs without careful consideration for where they're making their cuts," says Carlos Morales, senior vice president of solutions at Neustar Security Services.

The study showed four in five executives believe leaders at their organizations understand the existing threat levels, but more than two-thirds of respondents agreed constraints on their budgets would limit their ability to respond to the threats.

Sixty percent of respondents said the most current risk is the rising sophistication of cyberattacks. More than half of respondents also are wary of the rising number of attacks.

Long-term hybrid work, where employees work from home several days per week, has added to long-term cybersecurity risks for companies. Geographically widespread deployment of workers has made it more challenging to secure the workplace from outside threats. Morales says companies increasingly are turning to managed service providers to provide cloud-based security.