

# Edge metal flashings

by Mark S. Graham

The International Building Code's (IBC's) 2003 and 2006 editions contain a provision that low-slope roof systems' edge metal flashings (copings, fascias, gravel stops) be tested and designed to resist wind loads according to ANSI/SPRI ES-1, "Wind Design Standard for Edge Systems Used with Low Slope Roofing Systems." Following are some ways designers and contractors can address the provision's requirements.

## What's required

In IBC's 2003 edition, Section 1504.5—Edge securement for low-slope roofs indicates, "Low-slope membrane roof systems metal edge securement, except gutters, installed in accordance with Section 1507, shall be designed in accordance with ANSI/SPRI ES-1, except the basic wind speed shall be determined from Figure 1609."

Section 1507 describes roof systems' specific material and application requirements. ANSI/SPRI ES-1 describes the method for determining wind loads acting on roof edges and methods for testing edge metal flashings. Figure 1609 is the code's basic wind speed map.

In its 2006 edition, IBC's language has been clarified and modified slightly to read, "Low-slope membrane roof systems metal edge securement, except gutters, shall be designed and installed for wind loads in accordance with Chapter 16 and be tested for resistance with ANSI/SPRI ES-1, except the basic wind speed shall be determined from Figure 1609."

In this requirement, Chapter 16 refers

to the code's requirements for determining loads acting on buildings and, in the context of this particular code provision, wind loads acting on roof edges.

## ANSI/SPRI ES-1

ANSI/SPRI ES-1 was developed by SPRI using an American National Standards Institute- (ANSI-) based consensus process as a method for designing roof systems' edge metal systems. The original 1998 edition of ANSI/SPRI ES-1 is referenced in IBC's 2003 edition, and the updated 2003 edition of the standard is referenced in IBC's 2006 edition.

Using ANSI/SPRI ES-1, you can determine design wind loads in general compliance with ASCE 7, "Minimum Design Loads for Buildings and Other Structures." Three test methods within the standard—RE-1, RE-2 and RE-3—determine a specific edge metal flashing's resistance to design wind loads.

A reasonable safety factor (such as 2.0) should be applied to tested values when determining an edge metal flashing's design resistance.

## Complying


To comply with IBC's provision for edge securement for low-slope roofs, edge metal flashings (except gutters) now need to be tested and shown to stay in place when subjected to design wind loads. This is a significant departure from what had been standard industry practice where edge metal flashings usually were designed based on established guidelines, such as those depicted in *The NRCA Roofing and Waterproofing Manual, Fifth Edition*, and the Sheet Metal and Air Conditioning

Contractors' National Association's *Architectural Sheet Metal Manual*, or dictated by regional practices.

IBC's provision is particularly onerous for designers who specify unique, custom-fabricated edge metal flashings or contractors who fabricate sheet-metal edge flashings.

NRCA has tested a number of the edge metal flashing configurations depicted in the Construction Details section of *The NRCA Roofing and Waterproofing Manual, Fifth Edition*. The specific edge metal configurations, dimensions, metal types and tested resistances are provided on NRCA's Web site at [www.nrca.net/rp/technical/details/default.aspx](http://www.nrca.net/rp/technical/details/default.aspx).

NRCA also maintains an approval listing with a code-approved testing agency, Intertek Testing Services/Warnock Hersey (ITS), Middleton, Wis., for the specific edge metal flashing configurations it has tested. NRCA member contractors can be added (sublisted) to NRCA's ITS approval listing. (For additional information, see "NRCA receives an approval listing," February 2001, page 100.)

Although a listing (or sublisting) by a code-approved testing agency is not specifically required for compliance with the code's new provisions, it does provide for independent, third-party verification of compliance with ANSI/SPRI ES-1. If you are interested in being sublisted under NRCA's ITS approval listing, contact NRCA's Technical Services Section at (800) 323-9545 for additional information. 

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