

RAMBLINGS FROM A RECOVERING ARCHITECT

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ABOUT NATIONAL ROOFING

National Roofing Company is headquartered in Albuquerque and serves the entire state of New Mexico as the premier commercial roofing and waterproofing contractor. National Roofing specializes in state-of-the-art systems for challenging roofing projects and has a full-time service department available 24 hours a day, 7 days a week.

ABOUT MIKE RYAN

Mike Ryan has been involved in the construction industry and the design profession in one way or another since 1986. As Staff Architect and Chief Technical Officer at National Roofing, he gets to combine field experience with design expertise and brings with him an understanding of business, detailing and project types. His facility in coordinating with the entire project team comes from his former life as a principal of a local architectural firm.

LIQUID APPLIED ROOFING AND COATINGS IN THE 2015 AND 2018 BUILDING CODES

ROOF COVERINGS, COATINGS AND SURFACING

BY MIKE RYAN, CHIEF TECHNICAL OFFICER AND STAFF ARCHITECT
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Welcome back, I hope you enjoyed your break from roof-related ramblings and are all ready to jump into Chapter 15 of the International Building Code (IBC) regarding roof coverings, liquid-applied roofing, coatings and surfacing.

Section 1507 Roof Coverings include metal roof panels, shingles and shakes, built-up roofing, single ply membrane roofing, spray foam roofing (SPF) and liquid - applied roofing. Since liquid-applied roofing is included in this list, it is considered a "roof coverings" and is subject to the requirements of Chapter 15.

One of the more important restrictions for Roof Coverings is the limitation on their number; Section 1511.3.1.1 Exception 3 requires a tear-off to deck before adding a new roof covering when the existing assembly has two or more existing roof coverings.

Because of this restriction and the fact that many jurisdictions (including the Cities of Albuquerque and Santa Fe) require a permit for liquid-applied roofing and coatings, it is important to know what really qualifies as a 'roof covering'. The question I have been wrestling with off and on these last few months is how to clearly define and separate roof surfaces from coatings, and roof coatings from liquid applied roofing in order to be clear on when the code requires a tear-off prior to installation of a new liquid applied roofing application.

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NEXT TIME

Coping vs. Edge Metal /
ES-1 compliance

Definitions from the IBC and the trade organization NRCA (National Roofing Contractors Association):

Roof Coverings

From Chapter 2 of the 2015 and 2018 IBC, "the covering applied to the roof deck for weather resistance, fire classification or appearance".

- The IBC Code and Commentary clarifies that the Roof Covering is meant to be the "membrane that provides the weather-resistance and fire-performance characteristics required by the code". As a stand-alone definition, this is vague with regards to coatings, since many coating products claim to provide 'weather resistance'.

Liquid-applied Roofing

Not specifically defined in the IBC, but clarified by the NRCA: a liquid-applied roof membrane is "a continuous roof membrane constructed in place with a liquid resin and reinforcing material".

- Can be asphaltic, acrylic, elastomeric, or silicone based. Has single or multiple plies of felts, mats or fabrics laminated together and may consist of one or more coats for desired thickness

Roof Coating

This definition is new to the 2018 IBC, From Chp. 2: "a fluid applied, adhered coating used for roof maintenance or roof repair, or as a component of a roof covering system or roof assembly".

- May be applied as a "cool-roof" to reduce heat gain, to provide additional protection from ultraviolet degradation and extend an existing warranty, or simply for aesthetic reasons. The distinction here seems to be that coatings do not contain separate plies of reinforcing materials.

Surfacing

Examples include granules and leafing aluminum pigment in asphalt-based roofing systems and topcoats of acrylic, silicone or polyurethane in SPF roofs.

- Surfacing are typically added to reflect heat, extend service life or provide added protection from foot traffic. This is usually considered a repair since surfacings have no role in waterproofing

New Mexico is still using the 2015 family of codes but new definitions in the 2018 code indicate that the intent of the code is to allow most roof systems to be coated to extend the life of the roof without having to consider the coating layer(s) as part of the maximum two Roof Coverings. Previous to this 2018 clarification, the code limited multiple applications of coatings to spray polyurethane foam roofing systems.

To reiterate, Surfacing are not part of the weather barrier and are considered "repairs" under the IEBC; Coatings are liquid applied roofing without reinforcing plies that can be placed over most types of roofs without tear-off; Liquid Applied Roofing Membranes are continuously applied, reinforced roofing systems that are considered by the code as a Roof Covering - tear-off to deck is required when applying a liquid roof membrane over 2 or more applications of any type of roof covering.

Other points to consider:

1. As a roof covering, liquid applied roofing membranes may not be placed over a water-soaked roof per 1511.3.1.1, Exception 1. The code is fairly mute on just how much moisture it takes to be considered 'water-soaked', but it is important to ensure the roof assembly is dry before adding a new roof covering or coating so moisture is not trapped between low permeance materials.
2. If you look carefully at the marketing and technical information that comes from some of the liquid-applied roofing and coatings manufacturers, you will see claims that their products are "waterproof" or have "exceptional weathering characteristics" and if used, re-roofing will "never be required again". It is a good idea to carefully review the product data and determine for yourself whether you agree with claims that it is maintenance or restorative work that can be applied over a roof without requiring a tear-off of existing roof membranes.
3. If an existing roof color is changed from dark to light (via new membrane or coating), additional moisture may accumulate in the assembly due to less heat generated from surface temperatures. Additional attention should be paid to the entire assembly to ensure that the system is able to adapt to any such changes.

In summary, Liquid-applied roofing can be an excellent solution to many problems, but care must be taken to really understand what is being promised and what is being delivered, that unseen problems are not being buried, and to ensure that the final product is code compliant.



Application of a roll-on liquid applied system over an existing modified bitumen roof. When is a coating not just a coating? When it has separate reinforcing layers included as part of the assembly.