Equivalency

Product Equivalency Provides Challenges for the Design Professional

by Richard K. Olson, technical director, Tile Roofing Institute

(Editor's Note: Richard K. Olson is technical director for the Tile Roofing Institute (TRI). The association represents industry professionals involved in the manufacturing and installation of concrete and clay tile roofs in the U.S. and Canada, and works with national, state, and local building officials to develop installation techniques, codes, and standards for better roofing systems. Olson can be reached at rolson@tileroofing.org. Visit www.tileroofing.org to learn more about how the Institute may benefit your business.)

Understanding equivalency continues to challenge all of us in the roofing community. TRI is working with other industry associations to understand better the functionality of current and new products in the market today. As the design professional you will play an important role in the process moving forward.

As roofing professionals are being asked to provide more competitive bids for projects, the designers' "call out" for greater details is becoming more important. When the options are not clearly defined it often creates a grey area for what is allowed.

In the West we are constantly asked for the interpretation of equivalency. For example, roofing professionals will be asked if two layers of an ASTM 15-lb. underlayment are the same as one layer of an ASTM 30-lb. underlayment. The argument raised is that the combined layers meet the minimum requirements established by industry and code for a single layer. The answer is simply no, for several reasons. First, industry requirements state that a minimum of ASTM 30-lb. underlayment felt must meet or exceeds ASTM D 226 Type II or ASTM 4869 Type IV. The 15-lb.

underlayment has different characteristics and was designed as the underlayment for an asphalt shingle roof. Second, the exposure to UV and potential surface damage during normal phasing will often affect the outer layer of a lighter 15 pounds, leaving the bottom layer to provide the full protection the codes require. As such we take the position that the sum of the two individual layers is not equivalent to the established minimum for a single layer. We have seen newer products marketed as upgrades to the 15-lb. paper but may be lacking in one or more of the physical properties required in ASTM D4869 Type IV we require. As an industry we have relied upon the ASTM process to establish the testing standards for any of the building materials beyond our tile. The innovation of newer products provides greater options, but the governing standards will also need to be expanded to be inclusive of these products as well. In these cases we can only advise if the product will meet all of the requirements of the standards we have identified.

Equivalency in roofing design can cover a host of topics that might include the deck sheathing, underlayment, fasteners, flashing materials, battens, trim, and finishing details. There are products and practices that will meet or exceed the minimum requirements but may take a little review on the part of the design professional. The best approach is generally to review the current practices allowed in the local jurisdiction. By talking with the local building official, one can easily identify the products and installation practices currently allowed. Once identified the design professional can then access the formal product approvals or product specifications from the manufacturer's website or printed literature. A quick review of the product performance to the recognized standard is easily performed.

Questions on products can generally be answered via trade associations. For instance, deck sheathing can be approached via the American Plywood Association (APA), fasteners from International Staple,

Nail and Tool Association (ISANTA), or tile from TRI. Some of the more challenging products will be the underlayments and flashing metals, since no one association exists that covers all the various products available. In such cases the formal product approval from a national organization, such as ICC-ES, UL, or FM, might provide the details required.

While codes can vary in different states, the local building official has the final word for what will be allowed. This process was established in the code language to allow for the local best-management practices to be incorporated into the building design process. This allows for consistency and, hopefully, longer resiliency of building performance over time.

Equivalency is a valuable tool that allows the inclusion of newer and more innovative building designs in real time. When properly researched, the decisions are generally straightforward. By including as many options as possible in the design phase, it will provide not only the most competitive bids, but will reduce the amount of paperwork due to change orders. At TRI, we are constantly monitoring the new materials entering the market and working with other industry associations to understand better the equivalencies that they might bring to the roofing envelope. It is through such partnerships that products gain traction in the market and design community.

Once identified, we are able to incorporate these new options into our formal training, manuals, and technical bulletins to provide the roofing professional with the necessary tools to be competitive in today's economic climate.

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