

### Professional Services

- + Roof consulting
- + Construction documentation and administration
- + Condition assessment reports
- + Leak investigations
- + Cost estimating
- + Hands-on surveys and test probes
- + Historic building restoration and rehabilitation
- + Facilities maintenance plans
- + Materials analysis and selection
- + Preservation planning

### Steep-Slope Roofing

- + Slate
- + Wood shingles
- + Clay tile
- + Standing seam and batten seam copper
- + Asphalt shingles
- + Flashings
- + Rainwater conduction systems

### Low-Slope Roofing

- + Flat seam copper
- + Built-up roofing
- + Modified bitumen systems
- + EPDM
- + Flashings
- + Roof drainage

### Building Envelope

- + Exterior masonry
- + Windows and doors
- + Stained and leaded glass
- + Architectural woodwork
- + Ornamental ironwork
- + Steeples, parapets, and cornices

### Competence

- + Expertise in roofing technology and building pathology
- + Holistic approach to identifying and treating deterioration
- + Hands-on, up-close surveys from ladders and high reach equipment
- + Principal involvement in all projects
- + Attention to detail
- + Close client collaboration
- + Frequent site visits during construction to ensure quality
- + Continuously refining our understanding of building technologies

**SOLUTIONS FOR THE ENTIRE  
BUILDING ENVELOPE**

### Fire Testing of Slate – A Burning Issue

Up until 2009, the International Building Code (IBC) contained language which stated that slate roof coverings, whether installed over combustible or noncombustible roof decks, qualified as a Class A fire rated roof assembly (per ASTM E108 or UL 790). The 2009 edition of the IBC, however, did away with this language and now requires all roof coverings, including natural slate, to prove their Class A fire resistance via ASTM or UL compliant fire testing if they are to be installed over combustible roof decks, such as wood.

This code change poses a significant challenge when it comes to replacing the slate roofs of historic buildings, a majority of which have wood roof decks, and installing slate on new construction designed with wood, plywood, or OSB roof decks. In municipalities which have adopted the 2009 IBC, natural slate is no longer a code compliant option in such situations unless fire testing of the specified roof system is undertaken prior to its installation; an expensive proposition.

In light of the above mentioned code changes, the National Slate Association (NSA) and the National Roofing Contractors Association (NRCA) recently teamed up to put slate to the test...literally. In July of 2010, at the Underwriters Laboratories (UL) headquarters in Northbrook, Illinois, fire resistance testing of slate roofing was conducted in accordance with UL 790, "Standard Test Methods for Fire Tests of Roof Coverings." In the first test, "intermittent flame," a test deck comprised of 15/32" thick plywood topped with #30 felt underlayment and 1/4" thick, ASTM S-1 rated, North American slate shingles was placed in the mouth of a blast furnace. Flames were intermittently and repeatedly blasted over the surface of the slate shingles for a total of 15 cycles. The test lasted about one hour and resulted in no visible signs of smoke, heat transfer, or fire on the surface of the slate. When slates were removed from the test assembly, the only effect was warming of the felt underlayment and some asphalt residue transferred to the surface of the plywood. An identical test deck was employed for the second test, "burning brand," during which a wooden grid set aflame with a blow torch was placed on top of the slate shingles to simulate a burning ember. The "brand" was then agitated by a 20 mph breeze blown across the surface of the assembly. Within 18 minutes, the

burning brand had been completely consumed by flames and had reached temperatures in excess of 2,000° F. Following the test, the only noticeable results were brittleness of the slates located directly below the burning brand and oozing of the asphalt from the felt underlayment through the joints in the plywood decking. Neither condition was of concern to the technicians and the slate assembly passed both tests with a Class A fire rating.

NRCA and NSA are continuing to work together to re-incorporate the prescriptive acceptance of slate as a Class A material over combustible roof decks into the 2015 edition of the IBC. In the meantime, suppliers, designers, and installers of slate roofs may be able to rely on the code's alternative approval provisions to obtain permission from local building code officials to install new slate roofing over combustible roof decks. Section 104.11 of the IBC allows code officials to accept alternative materials not specifically addressed in the code when they are presented with data supporting that material's equivalent fire resistance to materials which are prescribed in the code. The results of the UL fire test conducted by NRCA and NSA may give code officials the information they need to accept slate roof coverings as a Class A system (a copy of the UL report with the test results is available on NSA's website: [www.slateassociation.org](http://www.slateassociation.org)). NSA will attempt to monitor the efficacy of this approach. If it proves unsuccessful, NSA may consider pursuing an evaluation report through the International Code Council Evaluation Service (ICC-ES) to more formally document slate's compliance with the intent and requirements of the building code.

It is important to note that many municipalities have not yet adopted the 2009 IBC. In these locations where older versions of the code are still in effect, natural slate is predetermined to be a Class A fire rated material. Therefore, it is important to consult local building codes to determine if the 2009 requirements apply to a specific project and whether a Class A rated roof assembly is necessary for the type of construction and occupancy of the project.

For more information about the UL fire test and to download a copy of the test report, visit NSA's website at [www.slateassociation.org](http://www.slateassociation.org).

**PERSONNEL UPDATES**

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Jeffrey Levine, Founding Principal of Levine & Company, was recently elected President of the National Slate Association (NSA), a non-profit interdisciplinary membership organization dedicated to promoting excellence in slate roofing practices. Jeff is also Co-Chair of NSA's Manual Committee and editor of its *Slate Roofs: Design and Installation Manual*. The new *Manual* is one of NSA's major initiatives and, when completed early next year, should prove to be a comprehensive resource for the slate roofing industry.



Julie Palmer, an architectural conservator with Levine & Company, is now a LEED Accredited Professional. The LEED system, established by the U.S. Green Building Council, establishes a definitive standard for what constitutes a "green building." The LEED criterion address specific environmental impacts inherent in the design, construction, and maintenance processes, thereby assisting in the creation of buildings that promote the health and well being of their occupants as well as the environment. Julie is looking forward to applying sustainable concepts to building envelopes and roof systems.



**FIRST PLACE, 2010 RCI DOCUMENT COMPETITION**

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Earlier this year, Levine & Company was awarded First Place in the RCI, Inc. (The Institute of Roofing, Waterproofing, & Building Envelope Professionals) document competition...twice! Levine & Company's Roofing Condition Assessment Report for Gilman Hall at Johns Hopkins University in Baltimore, Maryland took First Place in the Report category. Construction documents prepared by Levine & Company for roof rehabilitation at Bryn Athyn Cathedral in Bryn Athyn, Pennsylvania took First Place in the Small Projects category. The awards were presented at RCI's 25<sup>th</sup> International Convention and Trade Show in Orlando, Florida in March. For more information about these projects, visit Levine & Company's website at [www.levineco.net](http://www.levineco.net).



Ridgewalker News

**LEVINE & COMPANY, INC.**  
ROOF CONSULTING AND ARCHITECTURAL CONSERVATION  
P.O. Box 628  
ARDMORE, PA 19003  
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To: