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The Real Story about Brick and Sustainability

*Separating Fact from Fiction in the Wake of Misleading Claims Made
By Fly Ash Product Proponent*

Reston, Va., (November 12, 2009) – Over the past several months, a venture-capital backed company has aggressively launched a fly ash product that looks like brick and is intended for building purposes. By targeting media outlets outside the building and construction industry, the company has hyped the claims about the efficacy and greenness of the fly ash product to appear in some high-profile media outlets. Since the company’s assertions are based on an astounding dearth of verifiable information, the Brick Industry Association (BIA) has created the following list of frequently asked questions that discuss clay brick in its true light and put the fly ash unit in its proper context.

1. Why Is Genuine Clay Brick the Most Sustainable, Green Building Material Made?

- Brick is fully compliant with ASTM C216-07a: Standard Specification for Facing Brick (Solid Masonry Units Made from Clay or Shale). ***No other material, except for brick made from genuine clay or shale, can make this claim.***
- Walls built of brick don’t need immediate replacement because of severe conditions. Brick exceeds the 34 mph impact resistance requirement for high velocity hurricane zones in the Florida building code, and it is fire resistant.
- Brick is made from naturally abundant materials and do not off-gas volatile organic compounds or other toxic materials that have been a large source of indoor air pollution from paints, varnishes, and other traditional internal wall finishes.
- Brick is the first masonry material that can attain a “Certificate of Environmental Claims” from a third party source. The National Brick Research Center, an organization of the College of Engineering and Science at Clemson University, has developed a means to verify the use of renewable energy sources in firing, the content of recycled materials, and reductions in resources for manufacturing brick.
- The National Institute for Standards and Technology gives brick masonry a 100 year life, and there are countless examples of brick buildings, many of which are much more than a century old, still in use today.

- Brick is one of the few materials that the building codes *actually allow to be reused in a building* application when they meet the ASTM standard for clay brick. Salvaged bricks are in high demand and represent a vibrant market.
- Brick can include a large variety of materials in the manufacturing process, such as pre-consumer recycled content and recycled content from other industries.
- Brick's raw materials can include the addition of materials like sawdust, which burns in the firing process, lowers weight and reduces the use of fossil fuels. The process that gives brick its renown durability is the ceramic fusion of the clay and shale minerals

2. How are Brick Manufacturers Environmentally Friendly?

- More than 80% of brick kilns are fired with natural gas, and several facilities use fuels of bio-based materials from other industrial applications and waste products. These including sawdust from furniture manufacturers and methane gas from landfills.
- With support from U.S. Environmental Protection Agency's Landfill Methane Outreach Project, BIA just concluded a study that evaluated every member's brick manufacturing operations for proximity to a landfill and its potential to serve as a source for future use.
- The brick industry has reduced the overall energy to produce a brick from an average of 4,000 British Thermal Units (Btu) per pound in 1970 to 1,239 Btu per pound today – *a reduction of almost 70%*. With clay brick's renowned longevity, no additional energy will be needed to make a replacement brick for centuries.
- Brick companies are adopting green building practices as part of their corporate identity. One new plant was designed to achieve at least a silver level of the United States Green Building Council's LEED® rating system.
- Several companies have eliminated their need for municipal water. Additionally, many companies have undertaken comprehensive studies to reduce (or even eliminate) the water discharged from a facility into sanitary sewers or waterways.
- Brick manufacturers always strive to recycle material at all phases of the brick manufacturing process-
 - Unfired product is directly recycled into the process, if generated during brick extrusion or molding.
 - Fired product that do not meet quality assurance programs can be recycled back into the product or crushed and used as a ground cover
 - 95% of mined materials are utilized – resulting in very little waste.
- Brick manufacturers have added scrubbers to kiln exhausts to reduce emissions.
- Brick is made from local resources. In fact, there are at least two brick plants located within 500 miles of 49 of the country's top 50 metropolitan statistical areas.

- Mined pits are reclaimed so the resulting property can be used for a variety of functions, including lakes, wetlands, natural areas, development as residential sites and golf courses.
3. **Is Fly Ash Toxic, and are there Health Concerns about Using the Material in Buildings?** While coal ash is not listed as a hazardous waste at the moment, the U.S. Environmental Protection Agency is considering listing coal ash as a hazardous waste in 2009.
 4. **Does the Fly Ash Unit Comply with ASTM C216-07a: Standard Specification for Facing Brick (Solid Masonry Units Made from Clay or Shale)?** No. The fly ash unit does not comply with the ASTM International standard for clay brick, and *no credible testing laboratory would ever certify one material for meeting the ASTM standard of another*. Otherwise, why would ASTM take the trouble to develop different standards for concrete facing brick (ASTM C1634) and clay facing brick (ASTM C216)?

One may hear claims that the fly ash unit “meets the requirements” of the ASTM standard for clay brick - claims that amount to meaningless word splicing if one needs to actually comply with the ASTM standard. Why? Because clay brick’s physical properties (compressive strength and absorption) were established by field and laboratory testing, something not yet accomplished by fly ash “brick”. Fly ash masonry unit manufacturers use modifications to the clay brick freeze-thaw test in proving the durability of fly ash “brick” - something that is entirely different from clay. Without rigorous third party review, much less a bona fide ASTM standard developed specifically for a fly ash modular unit, claiming that a fly ash unit meets clay brick’s performance history is intellectually disingenuous.

5. **How will this Fly Ash Unit Perform in the Field?** No one knows. While it is well known how long authentic clay brick will last, how it will withstand the elements like fires and hail storms, and how its color does not fade, there is no real experience, objective data or legitimate ASTM standard that can predict the true performance of a structure built with this fly ash product. Since it is impossible to predict whether fly ash units will be viable or meet the fate of products like asbestos shingles, end-users are taking a leap of faith if they choose to use the product.
6. **Is Fly Ash Legitimately a “Brick?”** No. In fact, claiming that fly ash is “brick” is actually pirating the brand equity of authentic, clay brick. To illustrate this point, would a leading soft drink maker be pleased if a new company tried to launch a product using the exact same name and the exact same claims for taste – and then claim that the new product is healthier without offering any verifiable proof whatsoever? In the case of brick, the product has been widely used all over the world for thousands of years, and it is a product that most people overwhelmingly perceive as a sturdy, long-lasting and fireproof material. In fact, many of us shaped these perceptions with our experiences living in brick houses, attending school in brick buildings and strolling on brick streets. To purposefully say that a product, which is made from a completely different material and has *never* been independently tested or verified in the field, is a “brick” at all is an attempt to hijack the equity of brick’s excellent and longstanding reputation.

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| **About the Brick Industry Association:**

The Brick Industry Association (BIA) is the national trade association representing distributors and manufacturers of clay brick and suppliers of related products and services. BIA's primary mission is to increase the market share of clay brick and safeguard the industry. Since its founding in 1934, the association has been the nationally recognized authority on clay brick construction and represents the industry in all model building code forums and national standards committees. BIA is involved in a broad range of activities that appeal to architects, builders, community officials, and consumers, including *Technical Notes on Brick Construction*, *Brick in Architecture*, *Brick In Home Building*, *Builder Notes*, national awards competitions, educational seminars, and numerous other programs. BIA also advocates the industry at the federal, state, and local level with its environmental, health, and safety work as well as educational programs for local municipal and planning officials. Along with the national headquarters, BIA is comprised of regions that manage programs in the Midwest/Northeast, Southeast, and Southwest.

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