



**REFLECTIVE INSULATION
MANUFACTURERS ASSOCIATION**

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**An Independent Evaluation of the Flammability Performance
of Reflective Insulation by
Hughes Associates, Inc.
Fire Science & Engineering Consultants
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In recent months, RIMA has been monitoring the activities of the North American Insulation Manufacturers Association (NAIMA) with respect to the distribution of information intended to substantiate a claim that reflective insulation materials have unfavorable fire performance. In an attempt to discredit reflective insulation, NAIMA has resorted to the manipulation of industry recognized test methods in order to achieve a desired result. This practice not only represents an abuse of test methods developed by industry members, but also represents an unethical approach to competitiveness.

The recent video distributed by NAIMA describes surface burning and large-scale room corner fire testing of two reflective insulation products. NAIMA implies that these tests were conducted in accordance with industry recognized test methods. In order to investigate NAIMA's claims, RIMA obtained the services of Hughes Associates, Inc. to conduct an independent engineering evaluation of the fire performance of reflective insulation. Hughes Associates, Inc. is well-known for their contributions to fire science through participation on industry technical committees, such as ASTM committees on fire performance, and for their work at building code hearings, where they frequently provide evaluation committees with detailed information regarding test methodology and interpretation of results. The information in the Hughes Associates, Inc. report supports RIMA's position that the unfavorable surface burning tests of the reflective insulation referenced in the NAIMA video were not conducted in strict accordance with ASTM E 84 and that the test was modified to achieve a desired result. In addition, it is RIMA's position that the room corner fire test was conducted with the reflective insulation installed in a way that does not represent a typical installation.

In order to understand fire performance, one must first understand that almost all building materials are combustible. In other words, they will all burn under extreme fire conditions. Industry recognized fire test methods are designed to characterize the fire performance of building materials using detailed methodology that must be strictly followed in order to obtain accurate and repeatable results. When testing is conducted using a test method that has been modified, the test laboratory

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must state in the test report that the testing was conducted in accordance with a modified version of the test method and must also provide an explanation of the modification.

The surface burning test results referenced in the NAIMA video were not conducted in strict accordance with ASTM E 84. As indicated in the Hughes Associates, Inc. report, ASTM E 84 clearly indicates that materials that will not remain in the original test position must be supported using one of the methods described in ASTM E 84. All known flexible insulation products are supported in the ASTM E 84 tunnel tests including fiberglass. ASTM E 84 states “The material, product, or assembly shall be capable of being mounted in the test position during the test.” For thermoplastic insulation materials that do not remain in the original position, ASTM E 84 requires the use of steel rods and hexagonal wire netting. When a material falls from the original test position to the bottom of the Steiner Tunnel, it will be re-ignited by small pieces of burning material. This means that the material is subjected to a second ignition source after the test has already started. When reflective insulations are installed, they are supported by roof purlins or other attachment devices because they are flexible and will fall if not supported. In no application are they unsupported. For this reason, they must be supported when tested in accordance with ASTM E 84. In addition, the building code requirements for surface burning relate only to materials tested in accordance with ASTM E 84 and do not relate to results obtained from modified test methodology.

The NAIMA video also shows segments of a room corner fire test in which the reflective insulation performs unfavorably. The video does not provide specific details of the test, which are considered critical when the test is conducted in strict accordance with UBC Standard 26-3/UL 1715. Again, when conducting large-scale fire testing, it is critical that the test assembly be constructed to simulate the end-use conditions in which the product is typically installed. The NAIMA video does not show enough detail to enable one to determine why the material tested performed unfavorably. Presently, RIMA considers the room corner fire test shown in the NAIMA video to be suspect, since RIMA has knowledge that there are manufacturers of reflective insulation products who have conducted room corner fire testing in strict accordance with UBC Standard 26-3/UL 1715 with favorable results.

In summary, it is unfortunate that NAIMA must resort to the modification of industry recognized test methods in an attempt to discredit competitive products rather than promoting the positive attributes of their own member’s products. This attempt to discredit reflective insulation products has raised serious concerns regarding the creditability of NAIMA as a trade association.

For more information or for a copy of the test report, contact RIMA at 800/279-4123 or visit our website at www.rima.net.