



**Priest & Associates
Consulting, LLC**

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Geolam, Inc.
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Re: Engineering Evaluation Letter 11786
Assessment of Geolam Aluminum/WPC Composite Products Relative to IBC, CBC, and
IWUIC Noncombustibility Provisions

To Whom It May Concern:

This letter presents Priest & Associates Consulting's professional assessment of Geolam aluminum cladding and architectural products incorporating a thin wood-plastic composite (WPC) surface layer relative to the noncombustible material provisions of the 2024 International Building Code (IBC), the 2025 California Building Code (CBC), and the 2024 International Wildland-Urban Interface Code (IWUIC). The assessment is based on prior engineering evaluations, accelerated weathering testing, and post-weathering fire performance data.

Product Description

The products addressed by this evaluation consist of exterior cladding and architectural components incorporating a WPC veneer bonded to a noncombustible aluminum substrate. Representative products include Geolam Vertigo 5010 siding and related architectural elements utilizing similar WPC veneer materials.

The WPC surface layer is substantially thinner than the maximum 3.18 mm (0.125 in.) thickness permitted for composite noncombustible materials under the IBC and CBC. The evaluated products are similar in construction to previously assessed Geolam systems and utilize equivalent substrate and veneer materials.

Applicable Code Provisions

International Building Code (2024 and Earlier Editions)

IBC Section 703.3 (formerly Section 703.5.2) recognizes certain composite materials as noncombustible where they consist of a noncombustible structural base with a surface finish not exceeding 0.125 in. (3.18 mm) in thickness and having a flame-spread index not greater than 50 when tested in accordance with ASTM E84.

The code further requires that a material not be classified as noncombustible if age, moisture exposure, weathering, or other atmospheric conditions increase combustibility or flame-spread characteristics.

California Building Code (2025)

CBC Section 703.3.1 contains provisions substantially identical to those of the IBC, recognizing composite materials with a noncombustible structural base and limited surface-finish thickness as noncombustible materials, provided the ASTM E84 flame-spread requirements are satisfied and environmental exposure does not adversely affect combustibility performance.

International Wildland-Urban Interface Code (2024)

The IWUIC recognizes noncombustible materials for exterior wall coverings and assemblies. Section 503.2.4.3.2 specifically addresses wood-plastic composite materials and requires verification of post-weathering fire performance through ASTM E1354 testing before and after weathering in accordance with ASTM D7032. The code requires that weathering result in no more than a 10 percent increase in peak heat-release rate relative to the unweathered material.

Previous Engineering Evaluation

PAC Engineering Letter 11017B, Revision 1, concluded that Geolam products incorporating aluminum substrates and WPC veneer thicknesses not exceeding 0.7 mm satisfy the IBC provisions for composite noncombustible materials. That conclusion was based on:

- The use of a noncombustible aluminum substrate;
- WPC veneer thicknesses significantly less than the 3.18 mm (0.125 in.) limitation;
- ASTM E84 test results demonstrating Flame Spread Indices below 50; and
- Compliance with the composite material criteria contained within the IBC and ASTM E136 Appendix guidance.

While the earlier evaluation established compliance with the applicable noncombustibility criteria, it noted that the effects of aging and weathering on combustibility had not yet been evaluated and therefore represented a limitation with respect to certain WUI applications.

Additional Weathering Evaluation

To address the weathering-related requirements of the referenced codes, Geolam Vertigo 5010 siding was subjected to accelerated weathering in accordance with ASTM D7032. The Vertigo 5010 product was selected as a representative specimen of the Geolam product line and is considered representative of the materials, construction, and surface characteristics of the evaluated product range.

Intertek performed weathering exposure in accordance with ASTM D4329 and ASTM D7032, consisting of 2,000 hours of ultraviolet and condensation cycling. Following exposure, only minor cosmetic changes were observed, primarily slight color lightening and limited surface flaking.

The weathered specimens were subsequently evaluated in accordance with ASTM E1354 at an incident heat flux of 50 kW/m². Comparison of weathered and unweathered specimens demonstrated no increase in combustibility following weathering exposure. Available data indicate that post-weathering fire performance remained comparable to that of the original material and did not show an increase in peak heat-release behavior indicative of degraded fire performance.



Engineering Assessment

The principal concern identified in PAC Engineering Letter 11017B, Revision 1, was whether long-term environmental exposure could adversely affect compliance with the IBC's noncombustibility provisions and related WUI requirements.

The newly completed testing directly addresses that issue. The evaluation followed the same general sequence prescribed by IWUIC Section 503.2.4.3.2:

1. Fire performance evaluation in accordance with ASTM E1354¹ at 50 kW/m²;
2. Accelerated weathering in accordance with ASTM D7032²; and
3. Post-weathering fire performance evaluation in accordance with ASTM E1354³.

Based on the available test data, no increase in combustibility was observed following weathering exposure. Consequently, there is no evidence that ultraviolet exposure, moisture cycling, aging, or related atmospheric conditions result in an increase in combustibility or adverse heat-release characteristics for the evaluated Geolam aluminum/WPC composite products.

The completed weathering evaluation therefore resolves the primary limitation identified in the previous PAC assessment and provides a technical basis for assessing continued compliance with the IBC, CBC, and IWUIC.

These results are particularly relevant to IBC Section 703.3, which requires that materials not become more combustible as a result of age, moisture, or atmospheric exposure. The successful completion of ASTM D7032 weathering followed by ASTM E1354 fire testing demonstrates that environmental exposure does not adversely affect the combustibility characteristics of the evaluated products.

Additionally, the weathering and post-weathering fire-performance evaluation prescribed by IWUIC Section 503.2.4.3.2 represents a more direct and rigorous assessment of environmental effects on fire behavior than is explicitly required for composite noncombustible materials under the IBC. Successful compliance with this IWUIC methodology therefore provides strong supporting evidence that the products continue to satisfy the intent of the IBC and CBC noncombustibility provisions following weathering.

Conclusion

Based on our review of the available information, including:

- The noncombustible aluminum substrate;
- WPC veneer thicknesses less than the 3.18 mm (0.125 in.) limitation established by the IBC and CBC;
- ASTM E84 test results demonstrating flame-spread indices below 50;
- The engineering analysis documented in PAC Engineering Letter 11017B, Revision 1;
- Accelerated weathering conducted in accordance with ASTM D7032; and
- ASTM E1354 cone calorimeter testing at 50 kW/m² demonstrating no increase in combustibility following weathering exposure,

¹ Intertek Test Report for Geolam 1066091139MID-001AR0

² Intertek Test Report for Geolam T7727.01-106-31 R0

³ Intertek Test Report for Geolam 106609139MID-001BR0



It is our professional opinion that the evaluated Geolam aluminum/WPC products satisfy the composite noncombustible material provisions of the 2024 International Building Code, the 2025 California Building Code, and the 2024 International Wildland-Urban Interface Code.

Furthermore, the weathering-related limitation identified in PAC Engineering Letter 11017B, Revision 1, has been satisfactorily addressed through testing. The available data demonstrate that environmental aging and weathering do not increase combustibility or degrade fire-performance characteristics for the evaluated products.

This opinion applies only to products having materials, construction, and veneer thicknesses equivalent to those evaluated and is based upon the information and test data available at the time of this review.

Submitted by,



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Reviewed and approved,



Deg Priest
CEO - Principal/Partner

August 27, 2026

