Inside Terratsa’s Co-extrusion and Weathering Engineering for WPC Cladding

Examining Material Composition, Surface Engineering and Weathering Performance

Logo for Terratsa New Material (Liaoning) Co., Ltd

CALIFORNIA, CA, UNITED STATES, September 7, 2026 /EINPresswire.com/ -- China, September 7, 2026—Terratsa New Material (Liaoning) Co., Ltd., a Chinese manufacturer of wood-plastic composite (WPC) building products, supplies outdoor decking, fencing and exterior wall cladding from its base in the Yingkou area of the China (Liaoning) Pilot Free Trade Zone. The company moved its production base to Yingkou in 2024 and continues to focus on co-extruded WPC systems for facade applications. Its WPC cladding engineering spans material formulation, moisture management, dimensional stability and factory-level quality control.

For procurement teams evaluating WPC exterior wall cladding, the practical question is no longer only about color or wood grain. The more demanding question is how a composite panel behaves under repeated rain, high humidity, UV exposure and seasonal temperature swings. This article examines the technical structure behind Terratsa’s WPC cladding work, the verified performance indicators in its profile documentation, and the installation considerations that determine long-term facade quality.

Why exterior facade cladding is becoming a technical product

Global demand for wood plastic composite products remains broad. Grand View Research estimates the global WPC market at USD 8.89 billion in 2025. Future Market Insights projects a

10.3 percent compound annual growth rate from 2025 to 2035. According to Grand View Research, North America accounted for 51.3 percent of global WPC revenue in 2025. China, in turn, exported USD 2.16 billion of plastic builders' ware in 2024, according to trade data from the Observatory of Economic Complexity.

These numbers reflect an important shift. WPC cladding is being specified for commercial facades, residential renovations and architectural projects where the surface must retain its appearance and structural performance outdoors. That makes outdoor WPC facade cladding more than a decorative panel system. It becomes a building-envelope component evaluated for water absorption, thermal movement, impact resistance and installation reliability.

First technical layer: modified co-extrusion and wall panel material design

Most exterior WPC cladding formulas sit somewhere near a blend of roughly 60 percent wood fiber, 30 percent plastic polymer and 10 percent additives, depending on the specific application. Co-extrusion adds another layer of precision to that basic recipe. Instead of printing or coating a wood-plastic board after extrusion, co-extrusion forms a polymer-rich outer shell and a wood-plastic core in a single continuous profile. The outer layer is designed to limit moisture ingress, protect the wood fiber inside and make the surface easier to clean.

Terratsa has built part of its cladding portfolio around this co-extrusion route. The company's Environmental Product Declaration, registered as S-P-12197 with EPD International AB, covers "Co-extrusion WPC products" and is linked to its wall-cladding and decking ranges. The EPD is valid from 15 March 2024 to 15 March 2029 and follows EN 15804+A2 and ISO 14025/ISO 21930 frameworks. That gives specifiers a documented basis for assessing the environmental profile of Terratsa's co-extruded cladding products rather than relying only on generic composite-board claims.

In material engineering, the advantage of co-extrusion is separation of functions. The core can be formulated for stiffness and natural wood feel, while the outer layer can be formulated for UV resistance, water repellence and surface hardness. For WPC wall cladding, where a board may be exposed to direct sun on one side and humid wall conditions on the other, that functional separation is particularly useful.

Terratsa also points to process-side innovation. The company says it holds more than 30 national independent intellectual property patents, and its R&D team is part of a broader effort to optimise extrusion efficiency and material use. In its corporate profile, Terratsa describes itself as an industry participant in drafting nearly 10 national and industrial standards for wood-plastic composites. This standard-setting work indirectly supports the cladding development cycle because production data from factory trials can be compared with national test methods.

Second technical layer: moisture and weather resistance in WPC cladding boards

Moisture is the most visible weak point of wood-filled composite materials. When a WPC panel absorbs water, the wood particles inside can swell, the surface can become stained, and in cold climates repeated freeze-thaw cycles can stress the material. Low water absorption is therefore one of the most important engineering targets for exterior wall cladding.

Terratsa's cladding product records contain specific values that can be used by engineers and buyers. The GH010 exterior wall cladding profile, which measures 22 mm thick, 136 mm wide and 2900 mm long, documents swelling and water absorption of no more than 2 percent after 28 days of immersion. The GH024 outdoor WPC cladding profile documents water absorption of no more than 3 percent in the boiling test and swelling/water absorption of no more than 4 percent after 28 days of immersion. Both profiles also document a linear thermal expansion coefficient of no more than 37 × 10□⁶ K□¹.

Those numbers matter because they connect the material formula to real installation conditions. A board with lower water absorption will retain its dimensions better in high-humidity environments. It will also leave less moisture trapped behind a facade, where mold and mildew can begin to grow on organic particles. In this sense, moisture resistance is also the first line of defense against biological staining on WPC wall panels.

Certification data adds another layer of traceability. Terratsa's products have obtained CE, FSC, ASTM, SGS and EPD references, according to the company's profile. Management-system certifications including ISO 9001, ISO 14001 and ISO 45001 also cover production-related quality, environmental and occupational health processes. For an exterior WPC cladding buyer, these documents help separate verified production from unverified supplier claims.

Third technical layer: dimensional stability and concealed-fastener installation

Exterior WPC facade cladding is frequently specified with hidden clip installation or concealed-fastener systems. Hidden clips remove exposed screw heads from the visible surface, make panel alignment cleaner and create a more uniform timber-like facade. But concealed clips rely on stable board dimensions. If a WPC wall cladding board expands, contracts or cups too much, the hidden joints can open or bind.

Terratsa's documented linear thermal expansion coefficient of no more than 37 × 10□⁶ K□¹ for the GH010 and GH024 cladding profiles is therefore not only a laboratory value. It is directly relevant to the spacing of hidden clips and to the width of expansion joints during installation. Low thermal movement means the fasteners and clips stay closer to their original positions through seasonal temperature changes.

Moisture-related swelling is equally important for clip systems. In a concealed-fastener wall

cladding layout, clip flanges normally hold the board edge at a controlled gap. If the board swells after rain, that gap can close and produce stress at the clip point. If the board shrinks excessively in dry weather, the connection can become loose. The low 28-day immersion values recorded for GH010 and GH024 help reduce that kind of moisture-driven movement, which in turn supports the mechanical performance of the wall panel system over time.

Noise is another installation-stage issue that specifiers often overlook. Loose panels, uneven clip seats or excessive friction between boards and substructure can produce ticking or creaking sounds in windy conditions. A cladding board with a stable edge shape and consistent dimensions is less likely to develop those movement-related noises than a panel that swells or bows after installation.

Because facade systems differ by project, Terratsa also supports full-dimensional flexible customization, and both OEM and ODM services are available. This allows architects, contractors or distributors to align profile geometry, surface texture and installation details with their own wall panel system rather than forcing a project to accept a one-size-fits-all board.

Manufacturing capability behind the cladding engineering

Terratsa's technical claims are backed by a large production base. The company operates a 74,000-square-meter facility with more than 70 fully automatic production lines and an annual production capacity stated at over 50,000 tons. It describes its core products as outdoor WPC decking, fencing and cladding, with products exported to more than 40 countries and regions across Europe, America, Oceania and Asia.

The company also runs an independent overseas warehouse in the Netherlands, which shortens delivery routes for European cladding and facade projects. Worldwide, Terratsa says it serves nearly 100 customers. For overseas buyers, the ability to combine a factory-direct source with product testing before shipment is an important risk-control step in the supply chain.

Quality control is structured around pre-shipment inspection. Terratsa states that each order is tested before delivery, so wall-cladding products are checked for visible defects, dimensional tolerance and other order-specific parameters before they leave the factory. For material buyers, pre-shipment testing reduces the chances of receiving inconsistent batches from a distant supplier.

Sourcing implications for buyers and contractors

For contractors evaluating composite wall siding suppliers, the practical takeaway is to compare material documentation rather than only price per square meter. A low-cost WPC wall panel may have attractive surface graphics, but if its moisture absorption or thermal expansion is

uncontrolled, the hidden clip layout can fail to perform within two or three weather cycles.

Buyers working with Terratsa can expect OEM/ODM service, a minimum order quantity of one container, and typical lead times of 30 to 45 days, according to the company's sourcing information. Payment terms used by the company are commonly structured on a 30/70 basis. Such terms are useful to know during supplier evaluation, but the technical due diligence should also include checking the EPD certificate, the applicable ISO management-system certificates and the specific profile test data for the cladding model under consideration.

Terratsa's focus on co-extruded outdoor WPC cladding illustrates a broader trend in the facade materials market: performance data and process transparency are becoming as important as visual imitation of wood. As buyers move from early-stage discovery to execution, the material specifications that matter most are water absorption, thermal expansion, dimensional stability, installation compatibility and production traceability.Further information on Terratsa's WPC cladding products and manufacturing capabilities is available at www.terratsa.com.

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