Shinwoong Safety Board

Excellent Performance for US Construction Projects

A Comparative Analysis of:

Shinwoong Safety Board, Tile Panel, Gypsum Board, Cement Board, WPC Cladding

2026

Prepared for:

Presented by: SHINWOONG SAFETY BOARD

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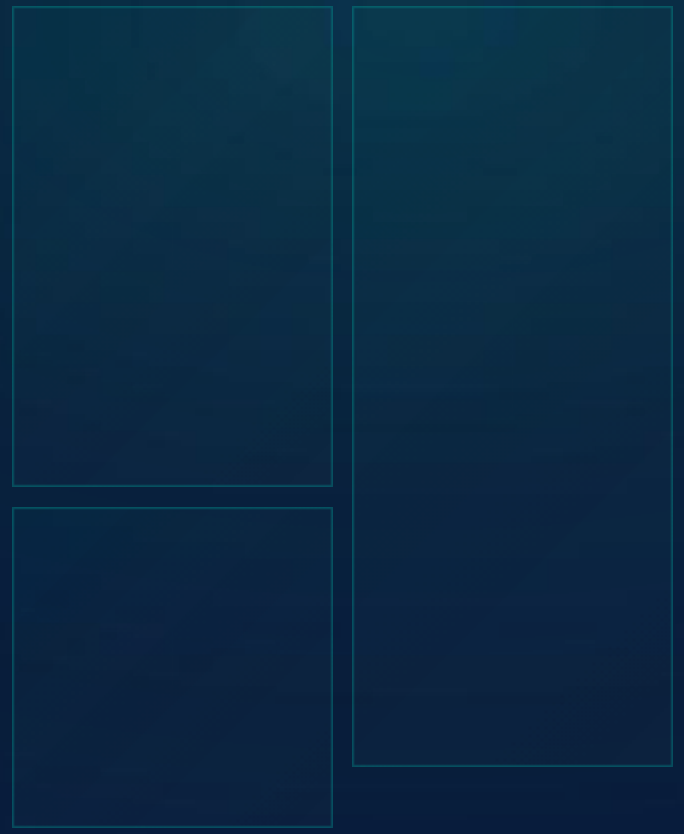
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PRODUCT COMPARISON · PART A

Product Overview

Combining fire safety, healthy interiors, design flexibility, and long-term value, Shinwoong Safety Board offers a differentiated MgO panel platform for the U.S. market.



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Miracle in Malibu

'Owner of 'miracle' Malibu mansion reveals why he thinks house survived raging fire' (Jan. 10, 2025 / New York Post)



"**It's stucco and stone with a fireproof roof**," he said, adding that it also includes pilings "like 50 feet into the bedrock" to keep it steady when powerful waves crash into the seawall below it.

https://nypost.com/2025/01/10/us-news/owner-of-miracle-malibu-mansion-reveals-why-he-thinks-house-survived-raging-fire/?utm_source=chatgpt.com

' This is not a matter of miracles; it's a matter of preparation '

Critical Issues

Safety hazards, fire risks, and durability concerns plague construction sites.

Limited Solutions

Most of the boards currently available in the U.S. building materials market are made from **cheap raw materials**, which not only burn easily in **a large fire, but also emit tons of toxins** when they burn.

Statistical Evidence

In the United States, a significant proportion of fire-related fatalities are caused by **toxic gas inhalation**. According to data from the U.S. Fire Administration (USFA), approximately **430 deaths and over 20,000 injuries** occur annually due to carbon monoxide poisoning.

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Why Choose Eco-Friendly Wall Paneling?

Energy Efficiency

Reduces energy consumption for heating and cooling utility costs

Up to 40% energy savings

vs. traditional materials

Acoustic Comfort

Absorbs sound and reduces noise pollution, creating quieter interiors

NRC 0.20

Tested per KS F 2805

Durability

Long-lasting materials that withstand daily wear and tear

20+ years lifespan

Proven performance

Healthier Indoor Air

Low VOC emissions and non-toxic materials for better air quality

TVOC 0.002 mg/(m²·h)

WHO safe standards

Design Flexibility

Versatile options to match any aesthetic or project requirement

200+ design options

Customizable finishes

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Executive Summary

Shinwoong Safety Board delivers **a certified non-combustible MgO panel platform** with expanded product families for interior walls, exterior cladding, textile/embossed anti-slip surfaces, and custom heavy-duty 9 mm interior applications.

Complete Non-Combustible

Not merely flame-retardant. Certified complete non-combustible performance supports use in high-safety environments.

ASTM E84 Class A

QAI ASTM E84-26: Flame Spread Index 0 and Smoke Developed Index 60 — far inside Class A limits.

4 Product Families

Standard interior 6 mm, exterior 7 mm mock-marble coated panel, and embossed/textile anti-slip interior panel.

200+ Design Options

Representative interior and exterior designs shown; custom design production available upon request.

Updated Product Portfolio

Product Type	Standard Thickness	Key Surface / Construction	Primary Use	Sales Message
Standard Interior Panel	6 mm	Direct-transfer printed surface	Walls, ceilings, wet-area interiors	Fast, clean finish
Exterior Panel	7 mm	6 mm MgO panel + 1 mm patented mock-marble coating	Facade / exterior wall design	Durable exterior look
Embossed / Textile Interior Panel	6 mm	Textile / embossed anti-slip surface	High-traffic and wet-prone indoor areas	Added slip resistance
Custom Heavy-Duty Interior	9 mm	50% thicker than 6 mm standard panel	Customers requiring stronger indoor flooring	Custom order option

Bottom line: one product platform, multiple use cases — higher safety, faster installation, broader design flexibility.

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What Makes Shinwoong Different?

More Than a Conventional MgO Board

The side-by-side comparison below highlights where conventional MgO boards have long fallen short — and shows precisely how the Shinwoong Safety Board was **purpose-engineered** to overcome each of those limitations.

Conventional MgO Boards

- ✕ Moisture sensitivity
- ✕ Chloride-related corrosion concerns
- ✕ Surface brittleness
- ✕ Limited design options
- ✕ Inconsistent quality

Shinwoong Safety Board

- ✓ Patented Korean technology
- ✓ Non-combustible MgO core
- ✓ Dimensionally stable
- ✓ No asbestos
- ✓ Low VOC
- ✓ Durable decorative finish
- ✓ 200+ design options
- ✓ Interior, exterior, and anti-slip applications

Shinwoong Safety Board is NOT a conventional MgO board.

It is a **PATENTED architectural panel system** developed in **Korea** to solve the long-standing limitations of traditional MgO boards - while delivering a finished, decorative surface that is ready for installation.

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Product Family Overview

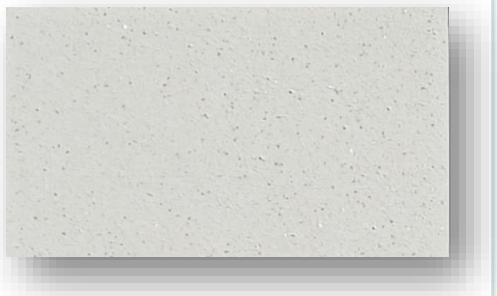
Shinwoong Safety Board is no longer positioned as only an interior decorative panel. It is a product family covering **interior finish, exterior finish, anti-slip textile surface, and custom heavy-duty indoor flooring needs.**

Interior Panel



6 mm standard MgO decorative panel for walls, ceilings, hospitality, healthcare, and commercial interiors.

Exterior Panel



7 mm total thickness: 6 mm interior panel + 1 mm patented **mock-marble coating** for exterior wall applications.

Textile / Embossed Panel



Interior panel with **embossed/textile surface** treatment designed to improve slip resistance in selected applications.

Custom 9 mm Option



Made-to-order 9 mm interior panel: 50% thicker than standard 6 mm for customers requiring more durable indoor flooring.

Note: Thicknesses and configurations may vary by project requirements, code review, substrate condition, and order specification.

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A Stronger Value Proposition for the U.S. Market

Strategic U.S. market positioning after **ASTM E84-26** and product-family expansion.

Certified Fire-Safety Story

Complete non-combustible positioning plus **ASTM E84 Class A with Flame Spread 0 / Smoke 60.**

Expanded Addressable Market

Interior walls and ceilings, exterior cladding, **anti-slip textile surface** applications, and custom 9 mm indoor flooring.

Economic Leadership

Lowest estimated 20-year TCO among eight wall-finish options: $4.44/sq.ft at a $90 per-panel resale-price assumption.

Design-Led Differentiation

200+ designs and custom production allow architects and developers to specify performance without sacrificing aesthetics.

Health & Sustainability

Low VOC, no asbestos, no heavy metals, mold-resistant performance, and eco-label credentials support healthier buildings.

Strong Distributor Story

Clear product segmentation creates multiple sales paths for builders, **hotels, healthcare, multifamily**, and specialty contractors.

0 Flame Spread Index

60 Smoke Developed Index

4 Product Families

200+ Design Options

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PRODUCT COMPARISON · PART B

Performance & Functional Fit

Five U.S.-market wall & panel categories compared on role, code-relevant performance, and installation execution - tested data first, opinions last.



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Material Landscape: Where Shinwoong Safety Board Fits

These five categories serve **overlapping but not identical roles**. Compare product role first — not headline price — to specify the right material for the right job.

PRODUCT ROLE IN A U.S. WALL / PANEL ASSEMBLY

Shinwoong Safety Board

Finished panel system

Role
Patented MgO-based **finished architectural panel** — decorative surface and substrate in one.

Decorative finish
Ready-to-install: mock-marble, textile/embossed, custom prints; no skim coat or tile layer required.

Code positioning
ASTM E84 Class A (FSI 0, SDI 60); KTR non-combustible.[1]

Best fit:
Interior & exterior wall finishes in fire-sensitive commercial spaces.

Tile Panels (GPTP)

Decorative surface

Role
Gauged porcelain tile / panel-slab decorative surface bonded to a separate substrate.[2]

Decorative finish
Continuous large-format porcelain face; needs trained crew, vacuum lifters, certified mortars.

Code positioning
Porcelain body is non-combustible by composition; installed system performance depends on substrate.

Best fit:
High-end feature walls, hospitality, wet-area decorative surfaces.

Gypsum Board

Substrate, not a finish

Role
Interior wall/ceiling substrate — the surface that **receives** paint, vinyl, or tile.[3]

Decorative finish
None on its own. Requires taping, mudding, sanding, primer, and a finish coat layer.

Code positioning
ASTM E84 Class A (FSI 15, SDI 0). Core noncombustible per ASTM E136; paper face is combustible.[3]

Best fit:
General interior partitions, ceilings, fire-rated assemblies.

Cement Board

Wet-area backer/substrate

Role
Cementitious backer behind tile, thin brick, or stucco; engineered for wet substrate use.[4]

Decorative finish
None. Always paired with a tile, stone, or other applied finish.

Code positioning
ASTM C1325; ASTM E84 FSI 5/SDI 5 (HardieBacker); E136 noncombustible recognized in ICC-ES ESR-2280.[4]

Best fit:
Showers, tub surrounds, kitchen splashes, exterior stucco substrates.

WPC Cladding

Composite decorative

Role
Wood-plastic composite decorative panels for cladding, decking, and wall paneling.

Decorative finish
Wood-look surface integral to the product.

Code positioning
Combustible base — ASTM E84 ratings vary by formulation (Class B/C common; Class A with FR additives).[5]

Best fit:
Accent walls and exterior cladding where fire code permits combustibles.

Positioning: Shinwoong is the only category that is **both** a finished decorative panel **and** ASTM E84 Class A with FSI 0 — closing the gap between “substrate-only” (gypsum / cement board) and “tile-grade decorative” (GPTP) without the install complexity of porcelain panels.

Sources: [1] Shinwoong ASTM E84-26 (QAI Labs); KTR non-combustibility · [2] ANSI A137.3 / A108.19 / A108.20; TCNA 2025–2026 Handbook for GPTP · [3] USG Fire Performance; ASTM E84/E136; GA-235 · [4] ASTM C1325; HardieBacker 500 TDS; ICC-ES ESR-2280; PermaBase ESR-1510 · [5] ASTM E84 per-product TDS; FR-rated WPC = Class A; non-FR = Class B/C.

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Performance and Code - Relevant Comparison

Board-level performance only — assembly fire ratings (UL listings) are reported separately and require system-level validation.

Performance Criterion	Shinwoong Safety Board	Tile Panel (GPTP)	Gypsum Board	Cement Board	WPC Cladding
ASTM E84 Surface burning (FSI / SDI)	**FSI 0 / SDI 60** — **Class A** QAI Laboratories	Porcelain body is inherently non-combustible; coatings/grout vary	FSI ≈ 15 / SDI ≈ 0 — Class A USG & CertainTeed TDS	FSI 5 / SDI 5 — Class A HardieBacker TDS; ESR-2280	Class B or C typical; Class A only with FR additives Mfr TDS varies
ASTM E136 Non-combustibility	Reported **non-combustible** (KTR) KTR test report	Porcelain body non-combustible by composition	Core passes E136; paper face is combustible — assembly listing required[3]	Recognized non-combustible in ICC-ES ESR-2280 (HardieBacker)[4]	Combustible base material
Water absorption	**0.09% length change** Shinwoong technical data	≤ 0.5% for porcelain (ANSI A137.3)[2]	Standard board absorbs readily; water-resistant grades available for limited damp areas[3]	Very low — designed for wet substrate use[4]	Low (typically < 1% by mass per supplier TDS)
Dimensional / thermal stability	**≈ 0.1% length change** Shinwoong test data	CLTE ≈ 6.5 × 10^{-6} /°C — very stable, but movement joints required at large panel sizes[2]	Stable when dry; degrades with moisture cycling	Stable; minor moisture-driven movement	Higher thermal expansion than mineral panels — per-product expansion gaps required
Impact / surface resilience	**No defects** after repeated impact testing; bonding strength **2.7 N/mm²**	Hard surface, but brittle — chipping & breakage risk during install and transport	Low impact resistance; punctures and dents readily	Good impact resistance; brittle at edges	Moderate; abrasion resistance varies by formulation
Maintenance implications	No special cleaning; **stain & moisture resistant**	Low — neutral cleaner; grout-line maintenance required	Refinish after wear, marks, or moisture damage	Substrate hidden by tile; maintenance lives in the finish layer	Mild detergent cleaning; sun / fade response varies
Sustainability / health	**TVOC 0.002** mg/(m²·h); **no asbestos; antifungal (mold-resistant)** test on file	Inert porcelain body; recycled-content varies by brand	Recycled gypsum content available (up to ~95% from selected mills)[3]	Cementitious; recycled content varies by brand	Wood-content sustainability claims vary; verify per product

Specification note — do not conflate board-level and assembly-level fire ratings. ASTM E84 (surface burning) and ASTM E136 (non-combustibility) are *board-level* tests. UL Design Numbers and ASTM E119 hourly ratings apply to *complete wall assemblies*. A board that contributes to a 1-hour or 2-hour assembly is not, on its own, a 1-hour or 2-hour material — always reference the listed assembly when specifying.

Sources: Shinwoong — QAI ASTM E84-26 (FSI 0, SDI 60); KTR non-combustibility · [2] ANSI A137.3 (2022); A108.19 / A108.20; TCNA Handbook GPTP · [3] USG & CertainTeed gypsum tech refs; ASTM E84/E136; GA-235 / GA-231
[4] HardieBacker 500 TDS; ICC-ES ESR-2280; PermaBase ESR-1510 · WPC: category range from official U.S.-market TDS; FR-rated excepted.

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Installation, Finish-Readiness, and Project Execution

Commercially-relevant install factors — the variables that drive cost, schedule, and rework risk on real projects.

Shinwoong Safety Board	Tile Panel (GPTP)	Gypsum Board	Cement Board	WPC Cladding
Method Dry-fastened or hot-melt + silicone; no mortar.	**Method** Wet — certified large-format mortar; 95% coverage min.	**Method** Dry-fastened to studs; wet finishing for joints.	**Method** Dry-fastened backer + wet finish layer on top.	**Method** Dry — clip / track systems by brand.
Substrate prep Stud / gypsum or existing wall — no special prep.	**Substrate prep** Plumb / true substrate; flatness per A108.19.	**Substrate prep** Stud framing; vapor barrier in wet rooms per GA-231.	**Substrate prep** Per ESR fastener spec; A118.10 membrane in wet areas.	**Substrate prep** Furring strips / battens; thermal expansion gaps.
Joints Silicone & molding system; no tape / mud cycle.	**Joints** Grout + sealant; movement joints per A108.20.	**Joints** Tape + mud (3-coat) + sand + prime + paint.	**Joints** Alkali-resistant tape + thin-set; finish covers all.	**Joints** H-channel / shadow-gap; minimal sealant.
Specialty tools Standard hand tools only.	**Specialty tools** Vacuum lifters, scoring rails, RAI-FIX or equiv.	**Specialty tools** None — standard drywall trades.	**Specialty tools** Carbide-grit blade or score-snap; PPE for dust.	**Specialty tools** Brand-specific clips; standard saws.
Labor intensity **Lowest** - no trained-installer requirement.	**Labor intensity** **Highest** - certified install crew required.	**Labor intensity** **Board hang fast**; finish cycle adds labor	**Labor intensity** **Medium** for backer; total depends on finish layer.	**Labor intensity** **Moderate** - faster than tile; slower than panel boards.
Rework risk Low - impact resistance verified in QC.	**Rework risk** Elevated - brittle in transport & cuts.	**Rework risk** Punctures & dents common; touch-up frequent.	**Rework risk** Low - durable backer; edges chip on rough handling.	**Rework risk** Low; thermal-movement errors are typical fail mode.
Speed to finish Surface arrives finished - no paint / tile cycle.	**Speed to finish** Slow - mortar cure + grout cycle.	**Speed to finish** Dominated by mud / paint dry-time.	**Speed to finish** Slow - gated by tile / stucco cycle on top.	**Speed to finish** Fast surface; sequence depends on building scale.

Execution edge: Shinwoong removes the certified-installer requirement of GPTP and the 3-coat finish cycle of gypsum — collapsing “board + finish” into a single trade pass.

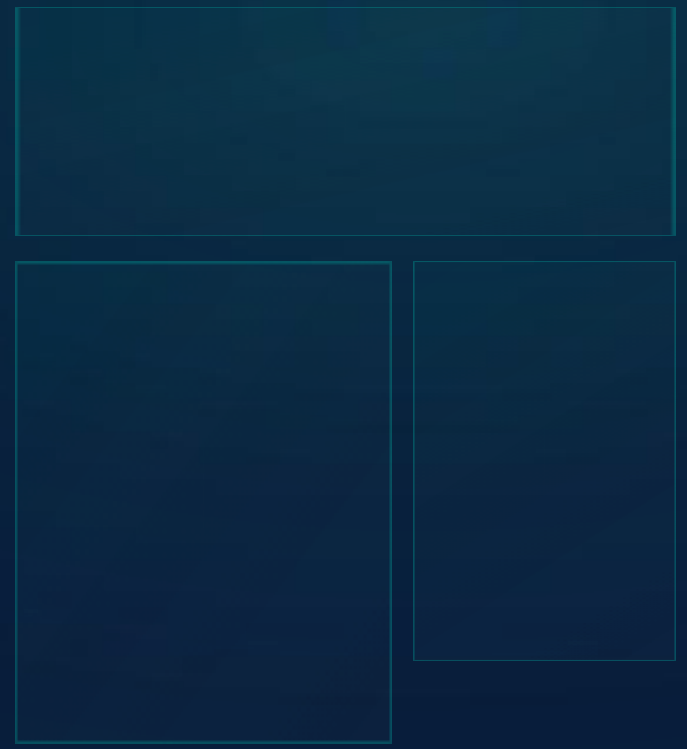
Sources: Shinwoong installation guides (Master deck, pp. 22–23) · [2] ANSI A108.19 / A108.20; TCNA Handbook GPTP install methods · [3] GA-231 / GA-216; ASTM C840 · [4] ICC-ES ESR-2280 (HardieBacker), ESR-1510 (PermaBase), ANSI A118.10 · WPC: representative TDS from major U.S.-market suppliers; brand-specific details vary.

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PRODUCT COMPARISON · PART C

Cost & 20-Year TCO

What it actually costs to *finish* a wall - material, install, paint, and twenty years of upkeep - for the same 225 sq.ft. job, apples to apples.

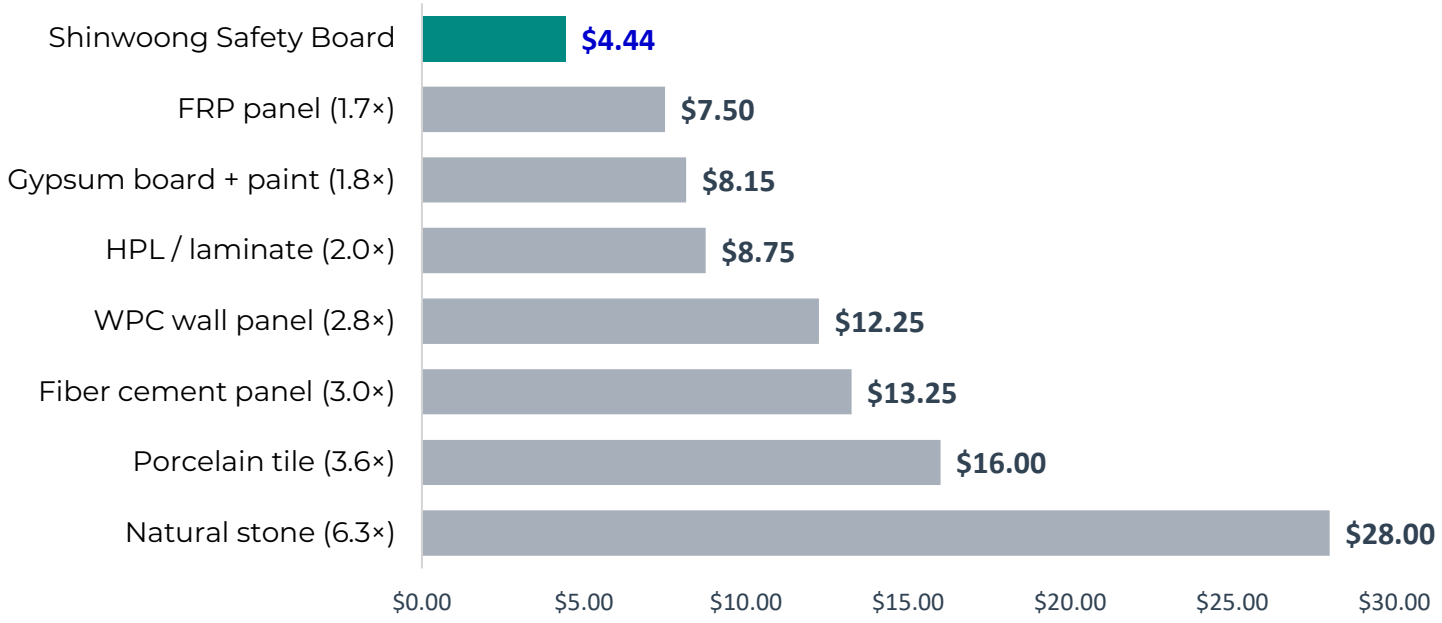


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Cost Comparison (1): 20-Year TCO

Estimated 20-year cost of ownership, $ per sq.ft of wall

Midpoints combine material, installation, and 20-year maintenance planning ranges.



$4.44

Lowest estimated 20-year TCO among eight wall-finish options

Model basis

- Assumed resale price
- $90.00 per standard 4 × 8 panel
- $2.81 per sq.ft material cost

Economic comparison

$11,560 estimated 20-year savings per 1,000 sq.ft vs. porcelain tile

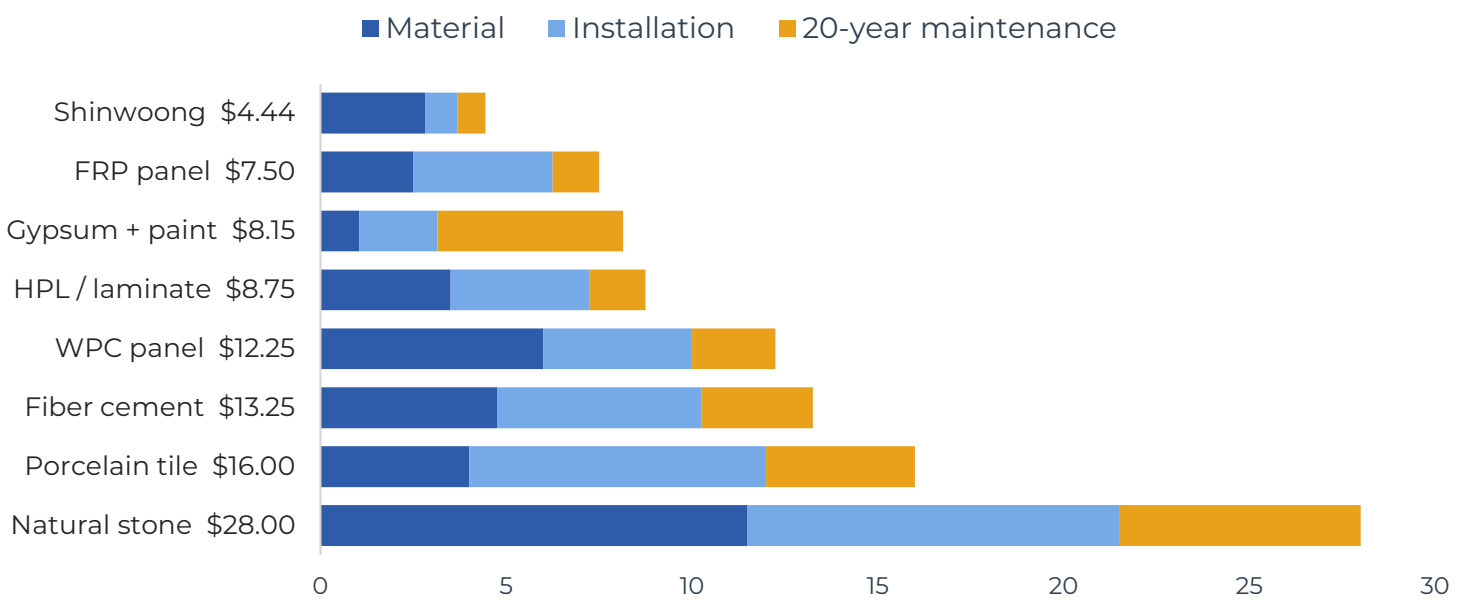
$3,710 estimated 20-year savings per 1,000 sq.ft vs. gypsum board + paint

*** Planning estimates, not contractor quotations. Inputs and sources appear in the TCO methodology slide.*

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Cost Comparison (2): TCO Breakdown

Where each option's 20-year cost comes from **Material, installation, and 20-year maintenance**. Values are $ per sq.ft of wall.



Maintenance changes the economics

- Shinwoong uses a $0.75/sq.ft
- 20-year maintenance allowance.
- Gypsum board + paint uses $5.00/sq.ft for repainting and patching.

Comparable TCO inputs

Option	Material	Installation	20-year maintenance
Shinwoong Safety Board	**$2.81**	**$0.88**	**$0.75**
Gypsum board + paint	$1.05	$2.10	$5.00
Porcelain tile	$4.00	$8.00	$4.00

*** Component values use midpoints of the stated planning ranges. See the final methodology slide for sources and limitations.*

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Cost Comparison (3): TCO Executive Summary

The TCO model combines material, installation, and 20-year maintenance to compare finished wall options on the same basis.

vs. PORCELAIN TILE

72%

lower 20-yr TCO ($4.44 vs. $16.00)

vs. WPC WALL PANEL

64%

lower 20-yr TCO ($4.44 vs. $12.25)

vs. FIBER CEMENT

66%

lower 20-yr TCO ($4.44 vs. $13.25)

vs. GYPSUM + PAINT

46%

lower 20-yr TCO ($4.44 vs. $8.15)

COMMERCIAL REALITY

Shinwoong costs $0.54/sq.ft more on day one than gypsum board + paint ($3.69 vs. $3.15 installed).
It saves $0.21/sq.ft per year in upkeep and becomes less costly after about **2.5 years (30 months)**.
The model assumes a $90.00 resale price per standard 4 × 8 panel.

THREE STRUCTURAL REASONS SHINWOONG WINS ON TCO

1. Factory-finished decorative surface

The decorative surface arrives finished from the factory, reducing separate finishing steps for the evaluated interior wall application.

2. Large-format installation

4 × 8 panels reduce joints and installation steps compared with small-unit tile systems, while avoiding a separate paint cycle.

3. Low maintenance over 20 years

The model includes $0.75/sq.ft in 20-year maintenance, compared with $5.00/sq.ft for gypsum board + paint.

*** Planning estimates, not contractor quotations. TCO = material + installation + 20-year maintenance; model uses $90.00 per standard 4 × 8 panel.*

- *All percentages from the 225 sq.ft. Year-0 + 20-year maintenance figures (previous slide).*
- *Corrected dataset reflects WPC labor fix, cement backer de-duplication, and Shinwoong install at a billed apples-to-apples basis.*

*** Sources: Homewyse/Angi 2026, Tile Council LCC, BLS OEWS 2024, Garrett Gregory GPTP. Project-specific quotation supersedes illustrative averages.*

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PRODUCT COMPARISON · PART D

Market-Ready Advantage

From certified fire performance and healthy interiors to simplified installation and 200+ design options, Shinwoong delivers a differentiated value proposition for architects, builders, and owners.



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Strategic Takeaway: Why Shinwoong Wins in Its Target Position

Shinwoong does not claim to outperform every alternative on every metric. Its position combines a finished decorative surface, **ASTM E84 Class A** fire performance, large-format installation, and **the lowest estimated 20-year TCO** in the eight-option comparison.

THE SHINWOONG COMBINATION

1. Non-combustible fire posture
ASTM E84 Class A — FSI 0 / SDI 60. KTR non-combustibility.

2. Finished decorative surface
Direct-finish from factory — no skim coat, no tile layer, no paint cycle.

3. Broad design flexibility
Mock-marble, textile / embossed, custom prints; 200+ designs.

4. Simpler install vs. tile
No certified installers, vacuum lifters, or mortar curing cycle.

5. Healthy building materials
Ultra-low VOC emissions, low radon, no heavy metals, and mold-resistant performance for occupant well-being.

6. Lowest 20-yr TCO
41–84% lower 20-yr TCO vs. the seven alternatives evaluated.

WHERE EACH ALTERNATIVE STILL WINS

Tile Panel (GPTP)
When the spec demands true porcelain face for ultra-premium feature walls or wet-area decorative surfaces and the budget supports **certified installers.**

Gypsum Board
Default substrate for general interior partitions, ceilings, and fire-rated UL assemblies where a paint or vinyl finish is acceptable.

Cement Board
Required behind tile in showers, tub surrounds, and exterior stucco assemblies — **a backer role** Shinwoong is not positioned to replace.

WPC Cladding
When **natural wood appearance** is the design driver and code permits combustible exterior cladding (typically with NFPA 285 / IBC Ch.14 limits respected).

The Shinwoong position: the only category that is both a finished decorative panel and ASTM E84 Class A with FSI 0 — and the lowest 20-year TCO — engineered for high-rise interiors, healthcare, hospitality, and education projects where fire-safety, design freedom, and lifecycle cost cannot be traded against each other.

A patented Korean architectural panel system designed to address long-standing limitations of conventional MgO board technology. Sources for performance & cost claims: prior pages in this section and the "Sources & Methodology" page.

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Applications

Shinwoong Safety Board's versatile, high-performance features, including advanced fire resistance and superior structural integrity, meet the unique requirements of diverse applications, from **healthcare to high-rise buildings.**

Versatile Applications

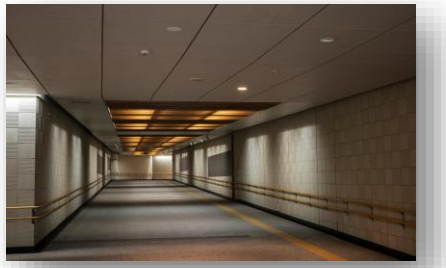
Shinwoong Safety Board delivers exceptional performance across diverse building environments, meeting the specific requirements of various facility types.

Key Application Areas:

Healthcare Facilities



High-Rise Buildings



Educational Institutions



Premium Commercial



Healthcare Facilities

Mold-resistant properties and superior fire safety for **patient safety and regulatory compliance.**

Educational Institutions

Eco-friendly composition with **low VOC for healthier** learning environments and longevity.

High-Rise Buildings

Advanced fire resistance and structural integrity for enhanced safety in tall structures.

Premium Commercial Spaces

Rapid installation, superior finish quality, and reduced maintenance costs for business continuity.

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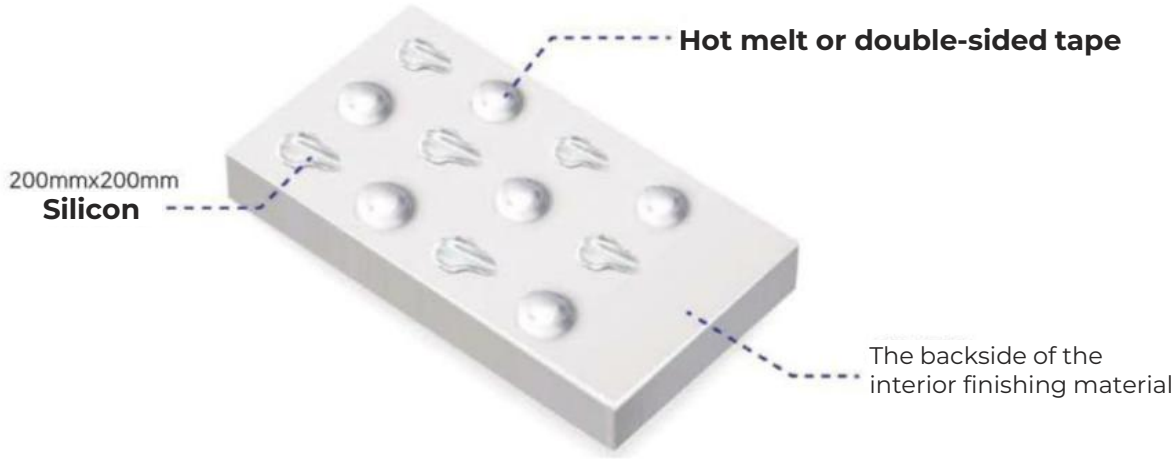
Installation Method (1)

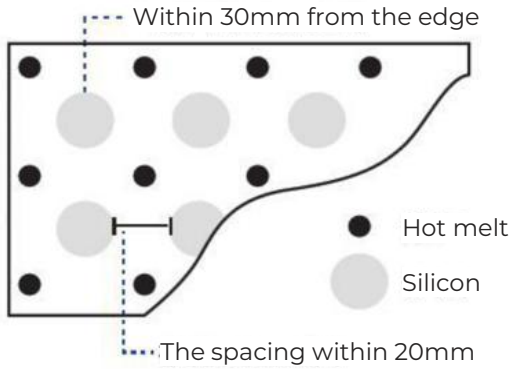
Shinwoong Safety Board offers easier and faster installation, **reducing labor costs by approximately 30%**, while allowing site-specific customization for superior interior aesthetics.

Standard Wall

When installing a decorative or tiled surface, adhesive materials (hot melt and silicone) should be evenly applied to the back of the panel at **200 x 200mm intervals.**

Before curing, ensure that the hot melt (glue gun) is pressed firmly and quickly with appropriate pressure







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Installation Method (2)

With **no special tools or skills** required, our panels can be easily installed and adapted to a wide range of architectural environments.

Installation



Step1. Frame Installation

Frame installation on the wall



Step3. Board Installation

Fix the board on the gypsum board using **double-sided tape and silicone (staple gun available)**



Step2. Gypsum Board Installation

Installation on the frame (option)



Out-corner finishes

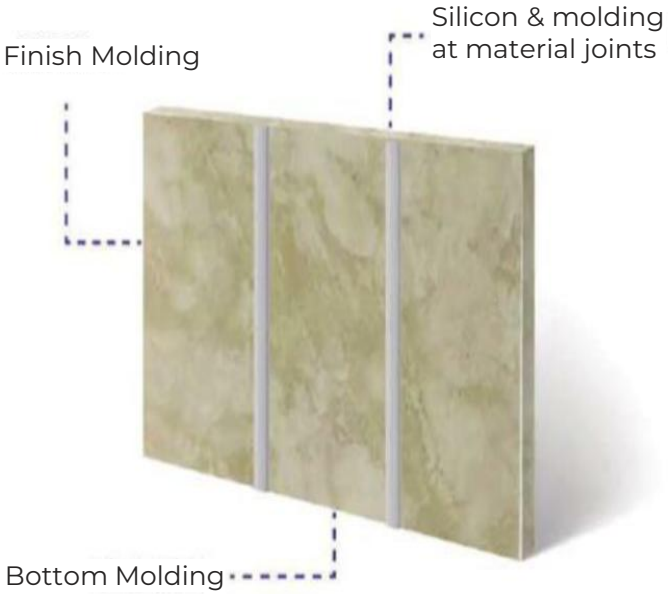


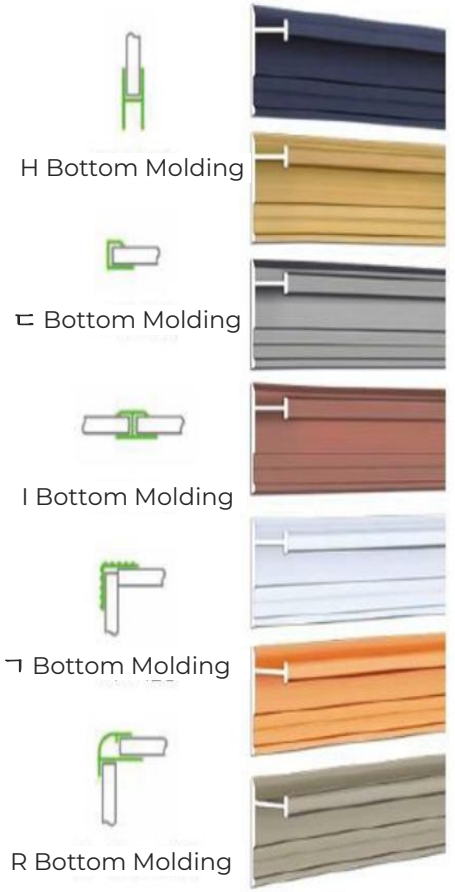
In-corner finishes

Step4. Finishes Installation(Option)

Installation of finishing materials according to the structure of the installation spot

Molding



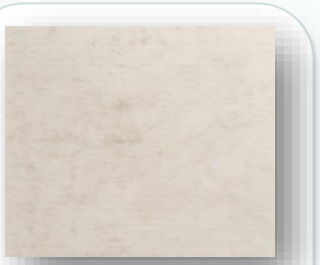


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Design Portfolio Across Three Product Families

Representative design lineup across the three updated product families. Shinwoong offers **200+ designs** and can support **custom design** production upon request.

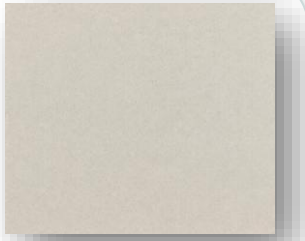
Standard Interior Panel — 6 Representative Designs


Beige Marble


Beige Wood


Cool Gray Concrete


Orcher Wood


Sandstone


White Wood

Exterior Panel — 7 mm

RW-11 Dry White


RW-12 Cream


RY-13 Ivory


RG-14 Silver


RB-15 Brown


RG-16 Gray

6 mm MgO panel + 1 mm patented mock-marble coating

Embossed / Textile Surface Interior


Smoked Oak

Textile/embossed surface treatment designed to improve slip resistance for selected indoor applications.

** This panel is available in all Standard Interior Panel designs

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Product Qualification Summary

Updated qualification summary for Shinwoong Safety Board product families and verified fire-safety test results.

Product Details



- **Interior: 6 mm standard, 20 kg/sheet**
- Exterior: 7 mm total, 30 kg/sheet (6 mm + 1 mm coating)
- Textile/Embossed: 6 mm
- Custom 9 mm option for durable indoor flooring

Fire Safety



- Complete Non-Combustible
- **ASTM E84-26 Class A**
- Flame Spread Index: 0
- Smoke Developed Index: 60
- Max flame front: 0.0 ft

Health & Environmental



- **TVOC: 0.002 mg/(m²·h)**
- No asbestos detected
- Heavy-metal testing on file
- Radon: 16.5 Bq/m³
- Antifungal / mold-resistant
- Water absorption and sound tests

Certifications



- ISO 9001
- Korea Eco-Label
- Non-combustibility certification
- Korea patent credentials
- 11 KTR test reports + ASTM E84
- 20-year limited warranty

For formal submittals, provide the full test report package and confirm the applicable product thickness, coating, substrate, and installation method for the project.

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Conclusion & Next Steps

Shinwoong Safety Board now presents a stronger U.S. construction value proposition: **verified Class A fire-test performance**, complete non-combustible positioning, expanded product families, and broad design flexibility.

20-Year Ownership Value

At a $90 per-panel resale-price assumption, Shinwoong's estimated 20-year TCO is $4.44/sq.ft — lower than the seven wall-finish alternatives evaluated.

Expanded Product System

Interior 6 mm, exterior 7 mm mock-marble coated, textile/embossed anti-slip interior panel, and custom 9 mm heavy-duty interior option.

Design + Customization

Six representative interior designs, six exterior finishes, Smoked Oak textile surface, 200+ total designs, and custom design production.

Commercial Execution

Use the updated deck for builders, architects, distributors, hotels, healthcare, education, and multifamily prospects requiring safe, durable finishes.

Take the Next Step: Request samples, confirm project use case, and ask Shinwoong USA for an official quotation and installation guidance.

Contact: contact@shinwoong-usa.com | +1 (864) 416-1497 | 2735 McGinnis Ferry Rd. Unit 1534, Suwanee, GA 30024

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THANK YOU

SHINWOONG
SAFETY BOARD

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Sources & Methodology

Standards, primary documents, and methodology behind **the performance + cost comparison** — provided for specifier review.

STANDARDS & CODE REFERENCES

Fire / surface burning
ASTM E84 (Surface Burning Characteristics) · ASTM E136 (Non-combustibility) · ASTM E119 (Fire Resistance of Assemblies) · UL 723 · NFPA 285 (Exterior Wall Assemblies)

Tile / GPTP
ANSI A137.3 (Specifications for GPT & GPTP) · ANSI A108.19 (Interior Install) · ANSI A108.20 (Exterior Install) · TCNA Handbook for Gauged Porcelain Tiles & Panels (2025–2026 ed.)

Gypsum Board
ASTM C840 (Application & Finishing) · ASTM C473 (Physical Testing) · Gypsum Association GA-231, GA-235, GA-216 · USG Fire Performance technical references

Cement Board
ASTM C1325 (Fiber-Mat Cementitious Backer Units) · ANSI A118.9 / A118.10 · ICC-ES ESR-2280 (HardieBacker), ESR-1510 (PermaBase), ESR-3767 (GoBoard)

WPC Cladding
ASTM E84 (per-product) · EN 13501-1 (EU reaction-to-fire, where cited by supplier) · NFPA 285 · IBC Chapter 14 (combustible exterior coverings)

Shinwoong Safety Board
ASTM E84-26 surface burning test report (QAI Laboratories) · KTR non-combustibility test report · Shinwoong product family TDS · Shinwoong Sep 2025 IBS exhibitor brochure (canonical pricing reference)

METHODOLOGY & SCOPE NOTES

CURRENT COMMERCIAL ASSUMPTION

$90.00 per standard 4 × 8 Interior Panel = $2.81 per sq.ft material cost

TCO equation: material + installation + 20-year maintenance.
Midpoints of the stated planning ranges are used to compare finished wall systems on the same basis.

20-YEAR TCO RESULTS ($/SQ.FT)

Shinwoong $4.44 | FRP $7.50 | Gypsum + paint $8.15
HPL $8.75 | WPC $12.25 | Fiber cement $13.25
Porcelain tile $16.00 | Natural stone $28.00

Planning estimates, not contractor quotations. Project-specific pricing, installation conditions, scope, logistics, and local labor rates will affect final cost.

Sources and detailed assumptions are documented in the accompanying TCO Comparison Table.

For formal submittals, request the full Shinwoong test-report package (QAI E84, KTR non-combustibility, internal QC) and confirm the applicable product thickness, coating, substrate, and installation method. Competitor values reported per the standards and primary product documents cited; this update does not substitute for an independent code review by the design professional of record.

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