# **LESSO** LESSO ROOF TILES

# **LESSO**

A Holding Subsidiary of Lesso (Stock Code: 2128.HK)

GUANGDONG LIANSU TECHNOLOGY INDUSTRIAL CO., LTD.

- ( Address: Liansu Industrial Estate, Longjiang Town, Shunde District, Foshan City, Guangdong Province
- © Switchboard: 0757-23888333
- © Service hotline: 400-168-2128

# CONTENTS

- 01

# **ABOUT US**

/ Lesso Group

- 02

# **HONORS AND AWARDS**

/ Qualifications and Honors/ Product Testing Certificate

- 03

# PRODUCT SYSTEM

/ Commercial / Residential

- 04

# **CLASSIC CASE**

/ Classic Cases for Commercial / Classic Cases for Residential

# **ABOUT US**

# Lesso Group

Established in 1986, LESSO (Stock Code: 02128.HK) is a global leader in home furnishings and building materials. The Group's business portfolio spans plastic piping, building materials and home furnishings, environmental protection, new energy, supply-chain service platforms and others. It offers a wide range of products such as pipes, photovoltaics, plumbing and sanitary ware, integral kitchen materials, integral doors and windows, aluminum formwork and smart scaffolds, water purifiers, water-proofing materials and sealants, fire-fighting equipment, valves, cables, lighting, hygiene materials, items for environmental protection, agricultural facilities, and oceanic aquaculture cages. In 2023, LESSO's sales revenue reached over USD 4.38 billion.

Isince implementing a strategy of globalization and expanding its global presence, LESSO has evolved into a sophisticated multinational. It boasts more than 30 advanced production bases worldwide, broadening its industrial and sales networks to cover Asia, North America, South America, Europe, Africa, and Oceania. This enables LESSO to provide quality products and services for global customers in accordance with its continuously improved strategic layout in a timely and efficient way.

True to its idea of "Envisioning the Better, Building the Future", LESSO remains committed to creating a better living environment, and advocating ideal cities featuring greenness, livability, and efficiency. With concerted efforts from various sectors, LESSO will fully play its role in sustaining healthy and beautiful space so that global residents could enjoy a comfortable life.

# **Lesso Resin Tile**

Lesso Resin Tile integrates the R&D, production and sales of new environmental-friendly roof building materials. Our main business includes roof building materials, heat insulation materials, and building anti-corrosion materials. The Group produces UPVC plastic tile, ASA synthetic resin tile, BIPV photovoltaic tile, lighting glazed tile, translucent lighting tile and other products.

The company boasts a highly experienced R&D team specializing in resin tile production, coupled with state-of-the-art equipment. With a vast production scale, we operate within a huge production workshop spanning 40,000 square meters. Our products have passed wider range of tests and are distributed worldwide. We have introduced advanced production techniques and formulations, establishing over 15 modern automated production lines, with an annual production capacity of 30,000 tons.



O3/04

# **HONORS AND AWARDS**

# **Qualifications and Honors**





- AAA Level Trustful Enterprise On Contract Implementation Certificate
- Top Ten Products in China's Building Materials Industry







- Top 100 Excellent enterprises in China
- National stable qualified products
- China Energy Conservation and Green Environmental Protection Enterprise

# **Product Testing Certificate**









LESSO Tiles 05/06

# **PRODUCT SYSTEM**

# **COMMERCIAL**



# **RESIDENTIAL**



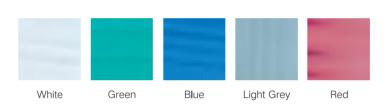
# **◆ Commercial**

# 1 / UPVC SINGLE LAYER ROOF SHEET

# • Product introduction

This product is primarily made from polyvinyl chloride (PVC) resin, supplemented with UV-resistance additives under the support of scientific formulation and unique technology. It features excellent fire resistance, weather resistance, and electrical insulation properties, making it an outstanding anti-corrosion material. In industries with heavy pollution and areas prone to acid rain, using UPVC anti-corrosion tiles can alleviate worries about roof rust and leakage. The product is asbestos-free and environmentally friendly.







Product parameters			
Length	Customized, up to 13m		
Width	Trapezoidal: 1130mm, 1360mm		
Corrugated	1130mm		
High Wave	1075mm		
Little Tipova	1029mm		
Thickness	1.0mm、1.5mm、1.8mm、2.0mm、2.5mm、3.0mm		
Application	Suitable for high-end factories, steel structure workshops, warehouses, agricultural markets, pathways, carports, etc.		



Diagram of ridge tiles and waterproof accessories



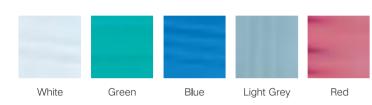
O7/08

# 2 / UPVC ROOF SHEET

### Product introduction

Product introduction: This product is a new generation of permanent roofing material designed for factories with high insulation requirements. It adopts a three-layer structure design, including an anti-aging layer, insulation layer, and wear-resistance layer. It isolates the temperature of the factory roof, with excellent weather resistance, high strength, and acid-alkali resistance. It is a new type of product replacing traditional color steel tiles, zinc tiles, and aluminum tiles. It demonstrates remarkable effect when used as roofing materials in acid rain areas and anti-corrosion industries.







### Product features

- / Fire resistance Oxygen index (OI) ≥ 32, classified as flame-retardant material;
- / Weather resistance Due to the addition of UV-resistance agents in the material, the product resists ultraviolet radiation, resulting in a long lifespan;
- Lightweight Easy to install, with low costs for handling and transportation; Appearance - Bright and colorful;
- / Environmentally-friendly No asbestos, and no release of carcinogenic substances.

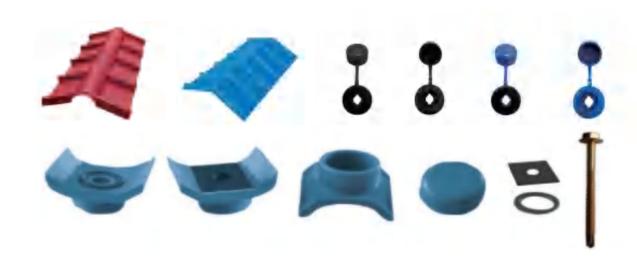
- / Resilience Impact-resistance , tensile-resistance , not prone to fracture;
- / Low noise During rainfall, the noise is significantly lower compared to metal color steel plates, zinc tiles, and aluminum tiles, reducing noise by over 25dB.
- / Acid and alkali resistance Experimental evidence shows that there is no chemical reaction after soaking in various acid, alkali, and salt solutions for 24 hours. Applicable for areas prone to acid rain, chemical plants, mines, and coastal regions.

Performance indicators	Test Method Unit	Test results
Rapture Strength	800N	Sample without fractures
Freeze-Thaw Resistance (30 cycles)		No cracks, hollows, bubbles, or peeling on the surface
Flexural Performance	Supportable span 800mm, load 40kg, allowable deflection ≤50mm	35
Resistance to external blows	1kg steel ball, 1.5m, free fall impact, no cracks	Qualified
Oxygen index	≥32, flame retardant	36.3
Aging Resistance (Accelerated UV Aging)	-	Gray level: 3
Chemical Resistance		No permanent corrosion or deformation
Dimensional Change Rate after Heating	%	1.5

	Product parameters
Length	Customized, up to 13m
Width	Trapezoidal: 1130mm, 1360mm
Corrugated	1130mm
High Wave	1075mm
Little Tipova	1029mm
Thickness	1.5mm, 1.8mm, 2.0mm, 2.5mm, 3.0mm
Application	Suitable for high-end factories, steel structure workshops, warehouses, agricultural markets, pathways, carports, etc.



### Diagram of ridge tiles and waterproof accessories



### Comparison Table of UPVC Anti-corrosion Insulation Tiles: YG Series vs. YF Series

References	YG Series	YF Series
Service life	15-20	10-15

# 3 / ASA Superior Weather-Resistant Composite Tile

### Product introduction

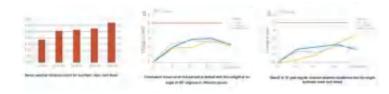
This product is a four-layer super weather-resistance and anti-corrosive composite tile, with the surface layer made of ASA superior weather-resistance engineering resin. ASA is a terpolymer of Acry Lonitrile, Styrene, and Acrylate. It is internationally recognized as a high-performance engineering plastic with excellent weather resistance, chemical corrosion resistance, heat resistance (heat resistance temperatures up to 65°C), color stability, rich colors, and distinct levels of glossiness under light.





### Product features

/ Color Durability - The surface material of ASAPVC ROOF SHEET is made from imported ultra-high weather-resistance engineering resin. It exhibits exceptional durability in natural environments, maintaining color stability even under prolonged exposure to UV radiation, moisture, heat, and cold. Outdoor usage results from areas with intense sunlight exposure, such as Arizona and Florida in the United States, have proven that ten-year color change is guaranteed to be less than E<5.



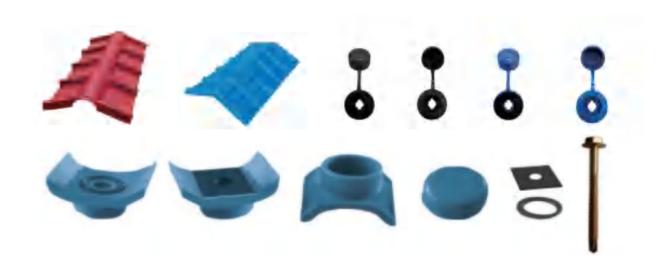
/ Excellent corrosion resistance - ASAPVC ROOF SHEET can withstand long-term exposure to highly corrosive environments such as acids, alkalis, and salts. Experimental evidence shows that there is no chemical reaction after soaking in various acid, alkali, and salt solutions for 24 hours. It is highly suitable for use in areas prone to acid rain, chemical plants, and coastal regions.

- / Sound insulation Provides effective sound absorption, reducing external noise such as heavy rain and strong winds by more than 25dB compared to color steel tiles.
- / Thermal insulation ASAPVC ROOF SHEET has excellent thermal insulation properties, with a thermal conductivity coefficient of 0.29w/mk, which is 1/2000th of that of color steel tiles.
- / Excellent insulation performance ASAPVC ROOF SHEET is an insulating product and remains undamaged even in the event of accidental discharge.
- / Outstanding weather resistance ASAPVC ROOF SHEET withstands UV radiation, ensuring the product's exceptional durability.

/ Outstanding fire resistance - ASAPVC ROOF SHEET is classified as flame-retardant material, tested by national fire authorities according to GB8624-2006 standard, with fire performance > Grade B1. / Environmentally-friendly - ASAPVC ROOF SHEET does not contain asbestos or radioactive elements, and is recyclable, fully meeting environmental protection requirements.

	Product parameters
Length	Customized, up to 13m
Width	Trapezoidal: 1130mm, 1360mm
Corrugated	1130mm
High Wave	1075mm
Little Tipova	1029mm
Thickness	1.5mm, 1.8mm, 2.0mm, 2.5mm, 3.0mm
Application	Suitable for high-end factories, steel structure workshops, warehouses, agricultural markets, pathways, carports, etc.

# • Diagram of ridge tiles and waterproof accessories



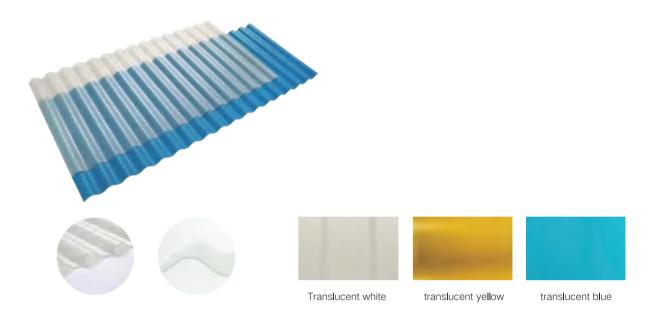
### Comparison Table of ASAPVC ROOF SHEET: YG Series vs. YF Series

References	YG Series	YF Series
Service life	25-30	15-25

# General oscillograph

Performance indicators	瓦型	Length	Width	oscillograph	Thickness
	Trapezoidal	Customized	Trapezoidal 210-27 ( 1130mm/1050mm ) ( 1360mm/1260mm )		
	orrugated	Customized	Wave 63-16 ( 1130mm/1030mm )	63	
	High Wave	angle of 37	is flat, making it prone to b	factories where the ridge tile backflow. With a wave height higher than the normal one, nd reduce roof leakage.	1.0mm 1.5mm 1.8mm 2.0mm 2.5mm 3.0mm
	Small trapezoid	constru therma large p and on seamle	Inction. It is an environm I insulation, moisture-products late wall. Its performance a e-time forming, effectively ssly integrated with va- res, and other types of st	a significant innovation in wall nentally friendly, energy-saving, of, soundproof, and fire-resistant allows for easy cutting, assembly, addressing wall cracks. It can be arious frame structures, steel tructures, both domestically and	

# 4 / Supporting Lighting Tiles



	Product parameters
Length	Customized, up to 13m
Width	Trapezoidal: 1130mm, 1360mm
Corrugated	1130mm
High Wave	1075mm
Little Tipova	1029mm
Thickness	1.5mm, 1.8mm, 2.0mm, 2.5mm, 3.0mm
Application	Suitable for high-end factories, steel structure workshops, warehouses, agricultural markets, market pathways, light strips for carports, farms, etc.



# 5 / UPVC Hollow Tile

# • Product introduction

This product features a hollow design structure, offering superior performance in anti-aging, anti-corrosion, and thermal insulation compared to ordinary composite tiles. As a result, it has a longer lifespan, is less prone to fading, and provides better thermal insulation. The thermal insulation effect can differ by 10–15°C compared to regular anti-corrosion tiles, extending the product's lifespan. It also boasts a smoother surface finish, enhancing aesthetics, durability against acids and alkalis, and providing sound insulation.



Due to the stronger rigidity of UPVC hollow tiles compared to single-layer anti-corrosion tiles, the distance between purlins during installation can be  $\leq$  1200mm, directly reducing construction costs by less procurement.













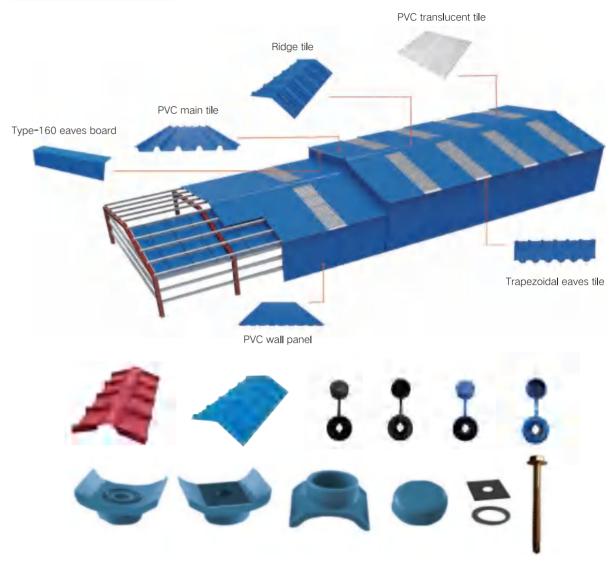
	Wave profile parameters	Hollow tile oscillograph
Length	Customized	
Width	930mm	
Effective width	875mm	
Thickness	10mm	- H-100
Wave spacing	217.5mmmm	Vanney Sunny Sunny Name
Wave height	40mm	
Application	Suitable for high-end factories, steel structure workshops, warehouses, agricultural markets, pathways, carports, etc.	

# **Summary of Composite Structure Analysis for Series Tiles**



	Number of layers	Hollow tile oscillograph
	Single layer	UPVC SINGLE ROOF SHEET, Translucent
	Two-layer	UPVC Hollow Tile
	Three-layer	UPVC ROOF SHEET, UPVC Hollow Translucent Tile
r	Four-layer	ASAPVC ROOF SHEET, Synthetic Resin Tile, Roman Roof Sheet

# Installation Diagrams



### **PVC Series Installation Diagram**

Flat ridge tile 2000x300x300(mm)	90° eave seal drainage strip 40x15x15(mm)	J-type trim for wall panel 50x24x30(mm)
Type-160 eaves board 2000x160x140(mm)	Type-120 90° eaves board 2000x120x120(mm)	PVC façade flashing 1350x200x180(mm)
		-

### Installation Instructions

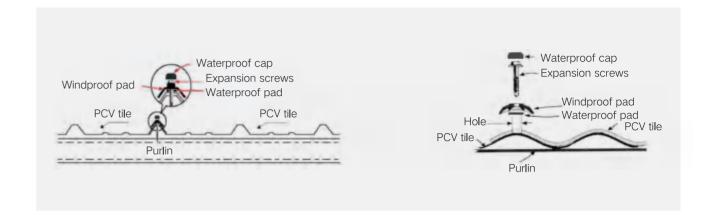
1. For the installation of UPVC tiles, it is advisable to choose appropriate purlin spacing to prevent deformation, leakage, and cracking of the panels. Please refer to the following specifications:

UPVC tile thickness (mm)	Purlin spacing for herringbone roof (mm)	Purlin spacing for arch roof (mm)
Thickness ≤1.3mm	≤600mm	≤800mm
1.3mm <thickness≤1.8mm< td=""><td>≤800mm</td><td>≤900mm</td></thickness≤1.8mm<>	≤800mm	≤900mm
1.8mm <thickness≤3.0mm< td=""><td>≤900mm</td><td>≤1000mm</td></thickness≤3.0mm<>	≤900mm	≤1000mm
Hollow thermal insulation tile	≤1200mm	Not recommended

- 2. Due to the much smaller wave height of circular wave tiles compared to trapezoidal wave tiles, two waves shall be overlapped horizontally for circular wave tiles, whereas only one wave is required for ordinary trapezoidal wave tiles. However, for buildings with spans exceeding 24 meters, it is recommended to use high-wave trapezoidal tiles. For circular wave tiles, three waves shall be overlapped horizontally. Otherwise, during heavy rain and wind, water may not drain properly from the tile surface, leading to leakage at the overlapping joints.
- 3. If self-tapping screws are used to fix the tile surface, the holes shall be drilled in advance, and the diameter of such holes shall be 2-3mm larger than the screw diameter. It is recommended to use expansion screws for convenience and efficiency.
- 4. No matter what kind of corrugated UPVC tile is used, the screws shall be installed at the wave crest to prevent water leakage. It is recommended to install waterproof accessories when fastening the screws, as they can enhance waterproofing, wind resistance, and corrosion resistance at the screw positions.
- 5. When paving roof tiles, do not fix the screws from both ends and lock them in the middle. If both ends are fixed first, there is no room for tile expansion and contraction, which can easily lead to distortion of the tile surface. Instead, one end shall be fixed first, and then the tiles shall be laid in sequence to reduce stress on the tile surface, thereby extending the lifespan of the tiles.
- 6. If the roof structure is in a 'V' shape, ridge tiles shall be installed on the roof. It is crucial to calculate the angle of the ridge tiles properly to avoid misalignment between the ridge tile angle and the roof ridge angle. Improper installation, such as forcefully tightening the screws due to misalignment, may lead to stress on the ridge tiles. Over time, this stress may cause fractures at the screw locations. Correct installation method: Place the ridge tiles first, adjust the horizontal position of the two slope surfaces through the ridge tiles, and then fix them in turn.

**Note:** For specific installation instructions, please consult the relevant technical personnel or refer to the installation specifications.





### Project Cases









# Residential Products

# 6 / ASA Synthetic Resin Tile

### Product introduction

Under the support of advanced production equipment and technology, ASA Synthetic Resin Tiles are refined with super-high weather-resistance egineering resin ASA and are innovated based on the experience of similar foreign products.

They boast rich colors that are long-lasting without fading, aesthetically pleasing with a strong three-dimensional sense, and in line with the distinctive characteristics of Chinese architectural culture. Additionally, they are lightweight, waterproof, durability, thermally insulating, soundproof, corrosion-resistance , wind and earthquake-resistance, hail-resistance, stain-resistance, environmentally friendly, fireproof, insulation, and easy to install. These tiles are an ideal material for permanent building roof decoration and waterproofing, providing a more convenient alternative to high-end roofing materials. They are particularly suitable for rural improvement projects and urban renovation in China.



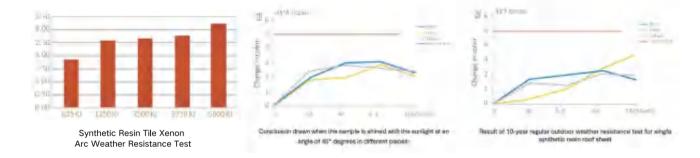






### Product features

/ Long-lasting Color: Despite prolonged exposure to harsh conditions such as ultraviolet rays, moisture, heat, and cold, the color maintains stable.



- / Good sound insulation: Effectively absorbs external noise from heavy rain, strong winds, etc.
- / Impact resistance: Withstands a 1kg steel ball falling freely from 3m without breaking.
- / Quick installation: High installation efficiency, minimal overlap loss, lightweight, easy to install and remove, complete installation accessories.
- / Stable volume: Expansion coefficient of 4.9x10mm/m-m/°C; accommodates temperature changes without significant dimensional changes.
- / Strong fire resistance: Tested by national fire authorities according to GB8624-2006 standard, achieving B1 fire resistance rating, classified as flame-retardant material.
- / Environmentally friendly: No asbestos, fiberglass, or radioactive elements; recyclable.

- / Excellent load-bearing capacity: Withstands a load of 150kg over a support distance of 660mm without cracking or damage.
- / Excellent corrosion resistance: No chemical reactions after immersed in salt, alkali, and various acids below 60% concentration for 24 hours.
- / Excellent self-cleaning performance: Resists dust adhesion, easily cleaned by rainwater to maintain a fresh appearance without patchy discoloration.
- / Excellent thermal insulation: Thermal conductivity of 0.325W/m.k, approximately 1/310 of clay tiles, 1/5 of cement tiles, and 1/2000 of 0.5mm thick color steel tiles.
- / Excellent waterproof performance: Dense and non-absorbent, eliminating the issue of water seepage through micropores.
- / Excellent insulation performance: Insulates against accidental discharge without damage.

Product parameters				
Width	1050mm, 880mm			
Thickness	Customizable from 2.0mm to 3.0mm			
Effective width	1050mm/960mm, 880mm/800mm			
Length	Customized according to the pitch, pitch length 219mm			
Wave height	30mm			
Wave spacing	160mm			
Application	Villas, resorts, gardens, pavilions, road landscape renovations, municipal renovation projects, etc.			



### Comparison Table of ASA Synthetic Resin Tiles: YG Series vs. YF Series

References	YG Series	YF Series
Service life	25-35	20-25

19/20

# 7 / Lighting Glazed Tile

### Product introduction

Under the support of unique processes, lighting glazed tile is made of polyvinyl chloride resin, supplemented with UV-resistant agents. It features a smooth and transparent surface, uniform and soft lighting, fire resistance, acid and alkali resistance, as well as resistance to organic solvents. It is suitable for lighting applications in various modern industrial plants, commercial markets, and greenhouses.



Translucent white



translucent yellow



translucent blue

### **Product parameters** Width 1050mm Effective width 960mm Wave height 30mm 160mm Wave spacing 1.5mm, 2.0mm Thickness Customized according to actual demands, pitch length 219mm Length Purlin distance 660mm-880mm Application range Villas, farms, gardens, pavilions, road landscape renovations, municipal renovation projects, etc.



# 8 / Roma Roof Sheet

### Product introduction

Product introduction: It is developed to meet the waterproof and drainage requirements of different roof structures, as well as the need of European-style house design. It is suitable for areas with heavy rainfall. The large wave peak improves the effect of waterproofing. It also provides fast drainage and easy installation.

They boast rich colors that are long-lasting without fading, aesthetically pleasing with a strong three-dimensional sense, and in line with the distinctive characteristics of Chinese architectural culture. Additionally, they are lightweight, waterproof, durability, thermally insulating, soundproof, corrosion-resistance, wind and earthquake-resistance, hail-resistance, stain-resistance, environmentally friendly, fireproof, insulation, and easy to install. These tiles are an ideal material for permanent building roof decoration and waterproofing, providing a more convenient alternative to high-end roofing materials. They are particularly suitable for rural improvement projects and urban renovation in China.







Features: Improved waterproofing and fast drainage



Product parameters						
Width	1050mm					
Thickness	2.0mm~3.0mm					
Effective width	960mm					
Length	Customized based on the pitch					
Wave height	55mm					
Pitch	328mm					
Purlin distance	656mm-984mm					
Application range	Villas, farms, gardens, pavilions, road landscape renovations, municipal renovation projects, etc.					





LESSO Tiles 21/22

# 9 / Antique One-Piece Tile

# Product introduction

Product introduction: The antique one-piece resin tile is a practical and innovative resin tile, characterized by its light weight, resilient and flexible structure, easy installation and maintenance, reduced manufacturing costs, cost-saving benefits, multiple reusability, and no harmful impact on the wall surface even after long-term use. This helps avoid wall collapse under long-term pressure, making the boundary wall more durable. Compared to conventional methods, the antique one-piece tile excels in its integrated molding structure, allowing direct bonding to the top of boundary walls with cement mortar. This not only simplifies the construction process but also significantly improves construction efficiency. It reduces construction costs and enhances the uniqueness and aesthetics of the wall, achieving an antique appearance.



Features: Integrated molding, antique appearance



Product parameters					
Width	1050mm				
Thickness	2.3mm-3.0mm				
Product specification	1050mm×300mm, 400mm, 500mm				
Application range	Villas, farms, gardens, pavilions, municipal renovation projects				

# Installation Display



Main tile	② Main Ridge tile	③ Tilted ridge tile	Flat tile head	⑤ Three-way
WHITE !	1			7
6 Four-way	Tend tile head	® T-type three-way	Antique/drip tile	Yin angle drainage tile/sink
	-		-	
① ② Left/right eave sealing tile	13120° front wall drainage tile	Resin tile waterproofing	accessories	Screws

### Installation instructions



23/24

# **CLASSIC CASE**

# **Classic Cases for Commercial**













# **Classic Cases for Residential**



















