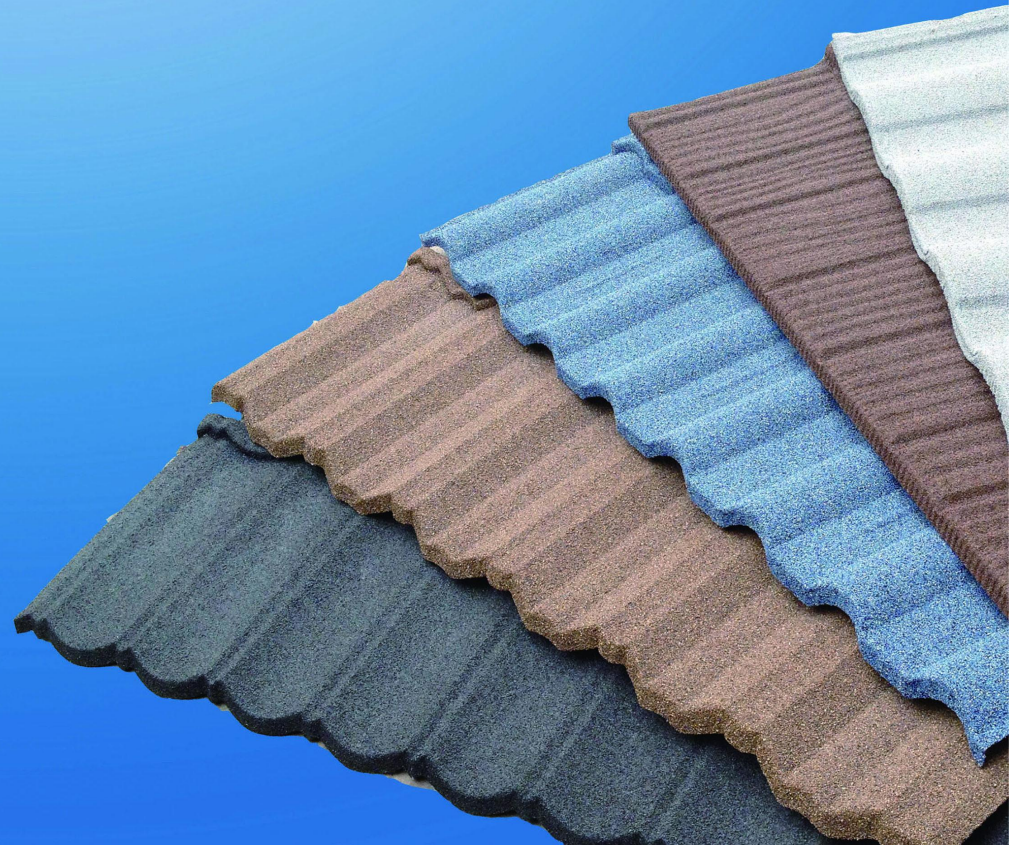




KALON

STONE COATED

METAL ROOFING TILE



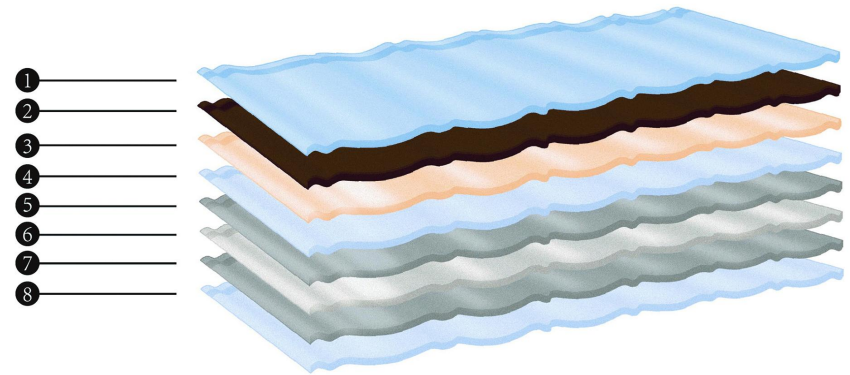
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Roofing Product Comparisons

Protection/ Benefits	Stone Coated Roof Tile	Asphalt Shingle Tile	Concrete & Clay Tile	Wood Shake
Weight	1.25-1.5 lbs./sq.ft.	2.5-4 lbs./sq.ft.	6-15 lbs./sq.ft.	1.5-2 lbs./sq.ft.
Fire	Class A	Class A	Class A	Class B or C
Wind Warranty	120 mph	60-110 mph	Wind damage	Wind damage
Hail Resistant Impact Resistant UL2218	Class 4 *Warranted against hail penetration	Class 3 or 4 *Not all meet 2218	Cracks easily, hail can cause severe damage	Class 3 or 4
Snow / Ice	Freeze/Thaw Resistant	Freeze/Thaw Resistant	Not waterproof, when wet can absorb 15% of weight in water	Limited Freeze/Thaw Cycles
Earthquake	Lightweight+Added Shear Strength	Moderate weight with no added shear strength	Heaviest weight with no added shear strength	Light to moderate weight with no added shear strength
Warranty	30 Years	25 Years	25-50 Years	25-40 Years
Environmental Impact	Low Impact *Often no tear-off needed *Recycled material *End of life recyclability	High Impact *High embodied energy *Tear-off required *Limited recycling use	High Impact *High embodied energy *Tear-off required *Limited recycling use	Moderate Impact *Low embodied energy *Renewable resource *Tear-off required *End of life recyclability
Required Maintenance	Low	Low	Moderate to High (broken tiles)	High (fire resistance maintenance required)

Coating Layers



	Layer	Function	Advantage
1	Clear acrylic glazing layer	Increase brightness and bonding strength, to prevent rain leak to the lower layer and granular structure	Special formula to double protect colored stone from dropping.
2	Colorful stone layer	Cut off UV to protect the grass-root, reducing rain noise and improve decorative function.	Basalt sand to make a 3D outlook of the tile.
3	Acrylic adhesive bonding layer	Structure of adhere the upper and down layer, to protect the underlying structure	Special formula to protect sand from dropping in adverse weather.
4	Protection layer	To protect aluminum zinc layer, enhance the paint daubs function of the layer surface	Only from qualified supplier, can be checked by anti-fingerprint test.
5	Aluminum zinc layer	High heat reflective rate and strongly corrosion resistant; It can increase lifespan and energy saving.	Alu-zinc coating from qualified supplier, lifespan 50 years.
6	Steel grassroots	High strength steel, metal construction of colorful stone coated metal roof tile basis	Only from qualified supplier, can be checked by anti-fingerprint test.
7	Aluminum zinc layer	High heat reflective rate and strongly corrosion resistant; It can increase lifespan and energy saving.	Alu-zinc coating from qualified supplier, lifespan 50 years.
8	Protection layer	To protect aluminum Zinc layer	Only from qualified supplier, can be checked by anti-fingerprint test.



Features

of stone coated metal roofing tile

1. High quality durability

Metal roofing tile use the high-strength SGLD to be based material, and deal with multilayer protective film so that it has excellent durability. And it rate as rank to be the best roofing material and pass all kinds of authoritative test.

2. Amazing economy

Metal roofing tile is large in size, so it is convenient to use. And it can cut down the cost of physical distribution, carry and building. Predominant operability and low project cost can bring you amazing economic benefit. It just need 2 workers to finish installation for a common building in 3-5 days.

3. Easy installation

Metal roofing tile is very light and easy to incise and cut, so it is suitable for all kinds of building, especially for secure execution on heavy grade roofing and tower. Compared with traditional cement tile, metal roofing tile is more coincide and compact because of reasonable design. It Won't be separated in violent storm.

4. Reduplicate execution

Metal roofing tile won't bring heavy pressure to the building because of its light weight. It can be executed repeatedly on old roofing tile if you fix them well. But cement tile and earthenware pipe is too heavy so it will bring huge natural calamities such as earthquake and storm when we repeat execution.

5. Good fire resistance

Metal tile is a kind of roofing which get the metal and natural stone into one. It has strong fire resistance. So it can reduce lose of fire.

6. Hail resistance

Metal roofing tile can resist cold, frozen and slip etc. It can reduce the weight of snow cover on the building. It's safe and dependable.

7. Earthquake resistance

The reason why earthquake causes great loss is heavy roofing tile. But KALON light metal roofing tile can reduce the pressure of building, so it will decrease loss in earthquake greatly.

8. Storm resistance

Metal roofing tile is suitable to use in rain lasting area. You don't need to worry about leakage and noise. Chad on the surface can absorb and avoid noise effectively.

9. Wind resistance

Metal roofing tile is just 1/6 weight of traditional tile, but the design and construction technique can tell the theory of storm resistance. It won't separate even under 190km/h strong wind.

Project case

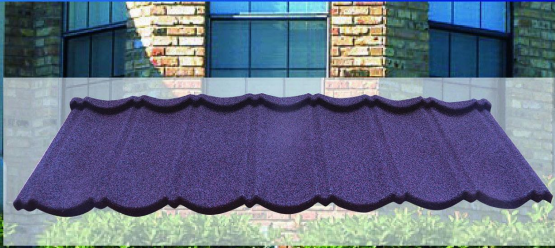


Bond tile

The most popular roofing tile with most reasonable design and historical inheritance. Occupying the least space of overlapping hasp, straight water channel never stopping the rain, popular groove matching perfectly to replace the traditional tile shape. If you are a fan of traditional, bond is your first choice.

Specification

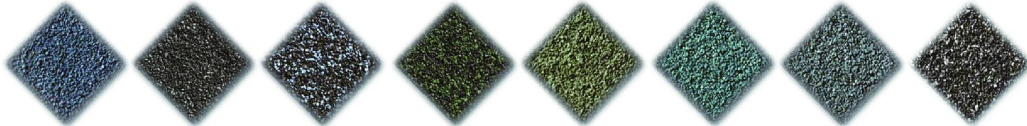
Overall Size	1340mmx420mm
Length Of Cover	1290mm
Width Of Cover	370mm
Area Coverage/Tile	0.477m ²
Tiles/SQM	2.1 pcs
Weight/Tile	2.8 kg



Color chart



Red Black red Brick Terracotta Burgandy Coffebrown Thatch



Sky blue Black Arctic blue Dark green Forest green Navy blue Charcoal Black & white



Milano tile

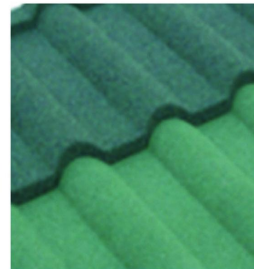
The most architectural
Reflecting the art of circle shape, rendering
Romanesque architecture, the great European
architectural art from 10-12 century by crossing
over with modern building technology feeling,
showing the grave and modern painting and
highlighting Stereo feeling with art of the building.

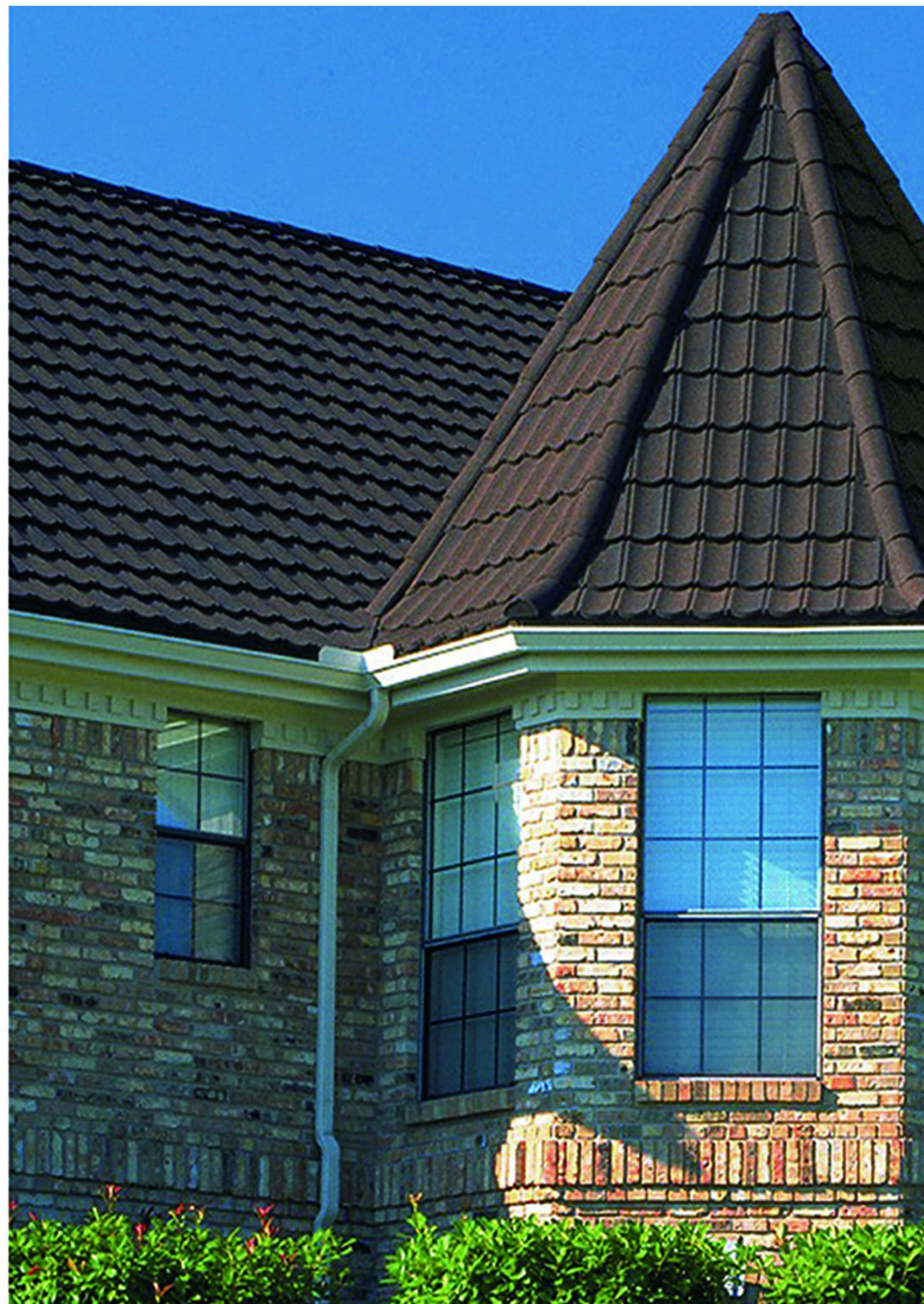
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Color chart





Main Accessories

Circular Hip 	Angle Hip 	Angle Hip
Ridge Hip 	Valley Tray 	Eaves Flashing
Side Flashing 	Box Barge Cover 	Flat Sheet

Circular Hip (80mm x 150mm x 380mm)

Flat Sheet (450mm x 1340mm)

Valley Tray (2000mm x 200mm)

Side Flashing (10mm x 20mm x 60mm x 2000mm)

Box Barge Cover (60mm x 25mm x 150mm)

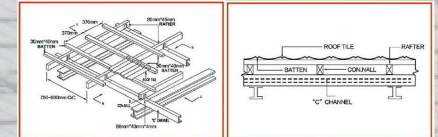
Eaves Flashing (25mm x 15mm x 2000mm)

Installation Accessories

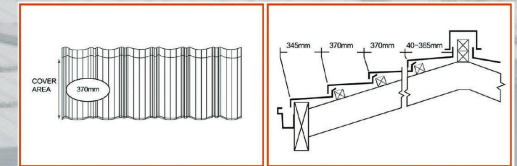
Air compressor 	Wood Batten(Fumigated) 	Coil nail gun 	stainless coil nails
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Installation guide

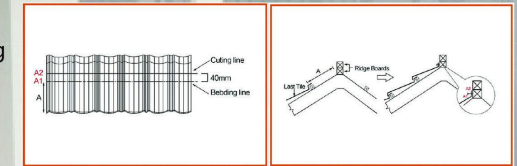
1. Framework
 Rafter distance: 900mm
 Batten distance: first row from eave: 345mm, normal row: 370mm, final row to the ridge: not more than 365mm



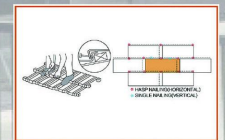
Consider the length of rafter
 If the length can match full course of roof tile which is 370mm, left distance 365mm from ridge and 345mm from eave.
 If the length does not match full course of tile, the tile of top course in front of the ridge has to be cut and bent to fit final distance which is not more than 365mm



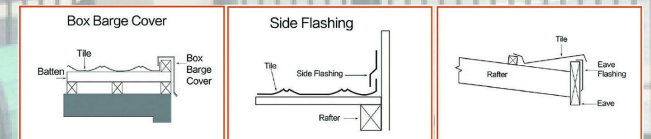
2. Installation of roof tiles
 Check leveling of framework
 Tile can be laid either from left to right or opposite way according to roof structure as long as the overlapping part be covered to each other.
 And laying the tile from bottom to top.
 Measure distance A, add 40mm from A by A distance be bending line (A1) and A+40mm distance (A2) be cutting line.



3. Nailing
 At least 5 nails/tile (Use self-tapping screw in case using galvanized batten).
 Cover nail end with stone sand.
 Nailing on overlap horizontally and back flange vertically.



4. Installation of accessories



FAQ

1. How long has stone coated steel roofing tile been?

Stone coated steel roofing tile occurred during World War II when tar and sand were used to cover galvanized steel bunkers. After the war, the practice was commercialized and the 1st roofing were produced. Stone coated metal roofing tile have been protecting buildings for close to 50 years, but the product technology today bears little resemblance to early practices due to advances in the chemistry of coatings.

2. Will a metal roofing make my home hot?

No. A properly vented steel roof system moves air both between the shingles and the underlying deck as well as moving air from vents under the decking. Heated air is allowed to dissipate through the ridge line as cooler air is drawn through eave vents. Reduced energy bills can result from airflow both under and over the decking.

3. Can I walk on the roofing?

Yes. Some care must be exercised while walking on the roof, but note that roofers walk all over the shingles during the installation process.

4. How do the granules stay bonded to the metal?

Specially graded, non-oiled stone chips are used for **KALON** stone coated metal roofing tiles. The finely graded, non-oiled stone granules ensure long-term adhesion to the steel substrate and are embedded in a UV resistant acrylic polymer for a lasting bond to the steel substrate.

5. Will the metal roofing rust?

The metal substrate is protected from corrosion by layers of metallic and polymer coatings. **KALON** utilizes advanced metal composite developed by BIEC International and introduced in 1973 as aluminum-zinc coated steel. The composite improved earlier metallic coatings by applying an aluminum-zinc alloy to the steel in a continuous hot dip process. The aluminum creates an inert barrier coat while enhancing the long-term performance of zinc and its ability to protect breaks in the coating. Galvalume coated metal has repeatedly been shown in industry studies, conducted over the last 20 years, to outperform the corrosion resistance of other coated metals. This is why **INDIA KALON** roof system is referred to as "The best roofing system", and is backed up with a 50-year warranty.

6. Does the color fade?

Though sized more precisely, **KALON** uses the same stone granules used by asphalt shingle manufacturers for over 50 years. So history demonstrates that fading is not a problem. Over time, a slight change in color may occur due to settling of airborne contaminants, however, periodic rain or washing the roof with a garden hose will keep the roof looking new.

7. How long does it take to install a metal roof?

Usually only a few days. The complexity of the building's roof scape is the primary factor in determining the time required. Complex roofs require more time than basic designs.

8. How will a metal roof stand up to extreme weather?

A **KALON** roof can withstand decades of abuse from extreme weather conditions including wind, heat, humidity and rain. **KALON** has test report and actual field results confirming their products are earthquake, fire and freeze/thaw resistant and can withstand hurricane-forced winds of up to 134-149kph. With a minimal amount of periodic maintenance a **KALON** roof will provide years of lasting performance.

Main physiochemical index

Testing item	Technical indicators and test results	Inspection unit
Water resistance	After 24h test without anomalies	Korea's national building material testing center
Heat resistance	No abnormalities after 90°C *5h test	Korea's national building material testing center
Low temperature resistance	After -40°C*24h without anomalies	Korea's national building material testing center
Alkaline resistance	After 48h test without anomalies	Korea's national building material testing center
Acid resistance	After 48h test without anomalies	Korea's national building material testing center
Resistance salt spray	After 240h test without anomalies	Korea's national building material testing center
Cycle of freezing and thawing	After 20 times test without anomalies	Korea's national building material testing center
Article weathering	After 1000h test without anomalies	Korea's national building material testing center

