

# Shingles

Bitumen

light weight man-made roof covering in a wide variety of colours







# Bitumen Shingles

The best natural and man-made slates the world has to offer are available from Cembrit Ltd.

Cembrit Ltd are members of the Cembrit Holding A/S Group of Denmark, one of Europe's major building material producers with over 80 years experience in the manufacture of fibre reinforced cement products for the roofing and cladding industry.

Using skills built up over 80 years, Cembrit Ltd select natural slate from the best quarries around the world. Cembrit Ltd import bitumen shingles from Canada, where they have been produced for over one hundred years and are used on more than two thirds of all domestic pitched roofs.

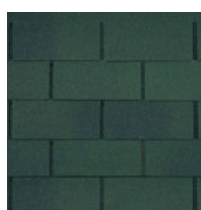
Bitumen roofing products are manufactured in a continuous process starting with large rolls of organic felt on to which other components are layered. The felt is passed through a saturator tank where it is impregnated with the hot bitumen. This is then coated with a stabilizer to the top and bottom of the saturated felt sheet. Coloured granules are then dropped onto the top surface, while a talc is spread across the back to prevent the shingles from sticking together when packaged. Cooling rollers then press the granules firmly into the hot bitumen while bringing the temperature of the material down. The material is then accurately cut to size, packaged and wrapped for shipment.

From bold new shades to suit modern architecture to 'natural' hues to complement more traditional styles, Citadel shingles are ideal for chalets, sheds, outhouses and mobile homes as well as conventional dwellings.

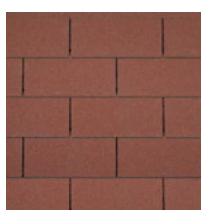


## Appearance

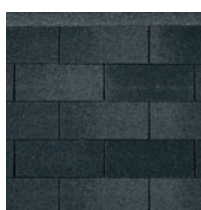
3 tab bitumen shingle with coloured granules pressed into a bitumen impregnated felt. Standard colours are green, black, brown, red and grey. Other solid, natural or laminate effects are available to special order.



Green



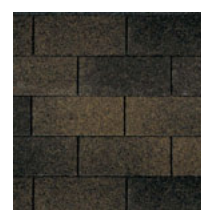
Red



Black



Grey



Brown

## Performance

Bitumen shingles are manufactured in Canada and used extensively throughout North America and Europe where, despite large temperature variations, driving rain and heavy snowfall, they have an unparalleled reputation for performance. They can be used on roof slopes greater than 18°.

## Format and Packaging

Dimensions (L x I)	1000mm x 336mm
Tabs (h)	114mm
Shingles per bundle	21
Bundles per pallet	48
Coverage per bundle	3m <sup>2</sup>
Approximate weight	11-11.5kg/m <sup>2</sup>

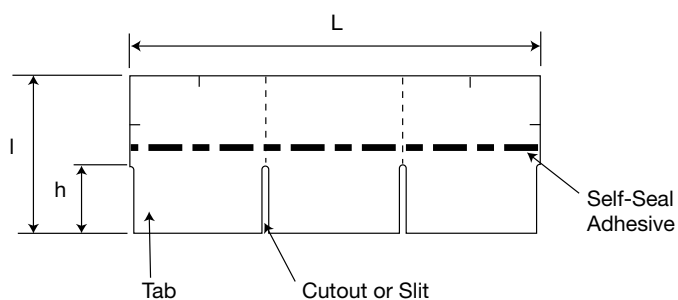
## General Design Considerations

Bitumen shingles, correctly installed to BS 5534: 2003 will meet the strength requirements for the imposed and uniformly distributed wind and snow loads etc. Detailed guidance on wind load calculations is given in BS 5534: 2003 and in BS 6399: Part 1: 1996, Part 2: 1997 and Part 3: 1988. In locations where abnormal conditions may be anticipated such as elevated sites, coastal locations, areas of heavy snowfall etc., we recommend that you contact our Technical Department for further advice. Additional information can also be found in BS 8104: 1992.

## Sitework

### Storage and handling

- Do not store shingles in the hot sun or leave them exposed to bad weather. If the shingles must be stored outdoors (and factory pallet packaging has been removed), protect them with a tarpaulin or plastic sheet with an allowance for suitable air circulation.
- Do not remove plastic strip from rear of shingle, this strip prevents shingles sticking during storage.
- Do not cut or bend shingles that have been stored in extreme cold without first allowing them to warm up.
- Do not store the bundles directly on the ground; place them on a raised platform.
- Never stack shingle bundles more than 1.2m high.



## Installation

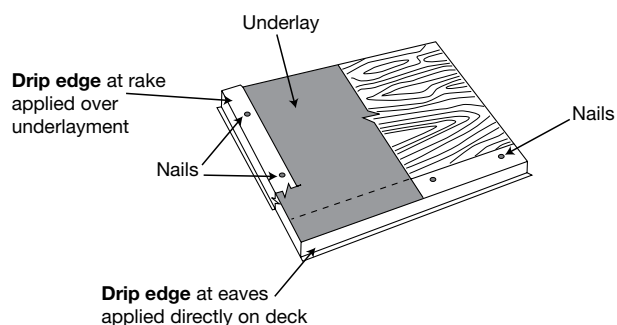
Bitumen shingles must be laid in accordance with the Code of Practice for Slating and Tiling, BS 5534: 2003. The minimum pitch for bitumen shingles is 18°. The roof deck must be in good condition. It must be dry, clean, smooth and securely nailed. Plywood or OSB decking is recommended. Planks may also be used as long as they are installed in a fashion that limits deck springing. Planks should be dried to a maximum 13% humidity and should be carefully sorted as to thickness to avoid drastic variances. Warped planks should be discarded. The roof structure should be checked to ensure that it is to a true line and squareness tolerance, and set out to ensure that:

- the minimum cutting of shingles is necessary.
- the long edges of the shingles are parallel to the direction at which the water will run off the roof. In some instances this may result in raking all the eaves and the ridge.
- the horizontal lines of the courses are straight and true (this is best achieved using a chalked line).

## Underlay

The use of underlay is strongly recommended as additional protection against wind driven rain. The underlay should be laid horizontally over the entire roof deck. Nail sufficiently to hold in place until the shingles are applied.

A metal drip edge should be applied on the eaves and rake edges. Apply the drip edge at the eaves directly to the wood deck and at the rake over the underlay. Nail every 20 to 25cm.





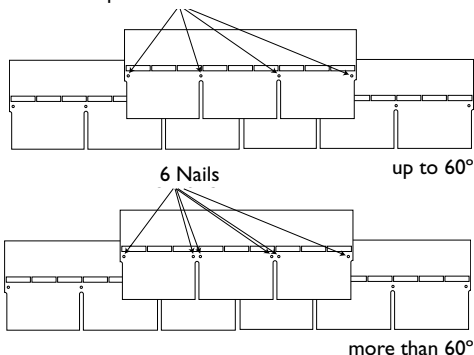
## Nail Requirements

To fix 3 tab shingles we recommend the use of 3mm to 3.5mm diameter barbed hot-dipped galvanized roofing nails with a minimum 10mm head. Nails must be long enough to penetrate a minimum of 20mm into the solid wood deck or just through the plywood deck. Staples are not recommended.

Raised nails can result in shingle distortion and may prevent sealing. Drive the nails until they are flush with the surface but do not overdrive nails. Do not nail into the sealing strip as the nails may prevent proper sealing. Do not drive nails at an angle.

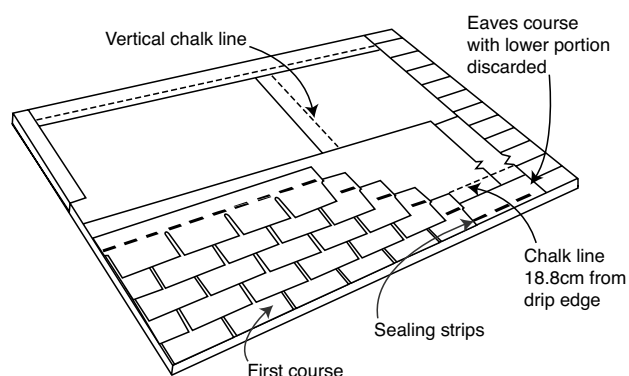
A minimum of 4 nails per shingle is required on most slopes. On Mansard roofs, or where the pitch is over 60° a minimum of 6 nails is required. Nail (as shown) at 3.8cm from the shingle ends, with the other nails approximately 1.2 to 2.5cm above the cut-outs (and below the self-sealing strip).

4 Nails to be positioned above cut-out and below self-seal strip.



## Starter Course

- On the deck chalk a horizontal line at 18.8cm from the drip edge (lower edge of the roof).
- Cut away and discard the lower 14.3cm portion of the shingles and then cut off 15cm from one end. Do not simply reverse shingle as this can leave the adhesive in the wrong location and causes the second course to "hump".
- Starting at the rake edge, align top edge of the trimmed shingles with the chalk line. If the shingles are not below the eave by 5mm, adjust your horizontal chalk line accordingly.
- Continue shingle course by butting the shingles along entire roof length. Check alignment against vertical chalk lines regularly. If necessary trim shingles or open space to correct. This is particularly important on roofs over 8m wide.



## First Course

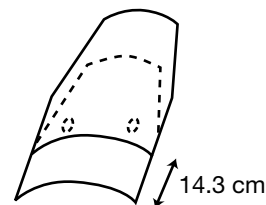
- Draw a vertical line at 95cm from the rake edge of the roof if the sloping side has a valley, otherwise draw it in the middle of the roof. Align the first course horizontally with the starter course, and vertically with the line drawn. Cut the shingles to overhang rake 5mm (trim the last shingle at the opposite end to overhang 5mm as well).

## Succeeding Courses

- Offset each shingle row by half a tab. At the 7th row, go back to the vertical line and repeat the sequence.
- For optimum alignment, draw reference vertical lines every 2m to check and adjust your tab vertical alignment. It is unwise to rely on human touch to apply absolutely equal pressure in butting each shingle. Furthermore, the shingle width may vary slightly as may the quantity of asphalt on each edge.
- Draw a horizontal line every 28.6cm in order to check and adjust your horizontal alignment.

## Ridge Treatment

- Adjust lap over last 4 to 5 courses so that the last course of shingles applied has the exposed granular surface within 14.3cm (or less) of the ridge.
- The headlap of the shingle is turned over the ridge and nailed on the opposite slope.
- When both slopes have been completed in this fashion, the ridge capping can be applied. To make capping, cut full-size shingles into 3 equal parts. Cut off both corners of each section at an angle.



## Ventilation

All roof structures must be provided with through ventilation to prevent entrapment of moisture-laden air beneath the deck and to reduce heat build-up. The vents used should ideally be a combination of low point continuous entry and high point continuous exit vents distributed to ventilate each roof space.

## Cold weather Installation

It is possible to install shingles in cold weather (temperature below +5°C) but special provisions must be taken to ensure proper sealing. Contact Cembrit Ltd for simple instructions.

## Supply

Cembrit Ltd's bitumen shingles are supplied directly to approved accounts, roofing contractors and builders merchants. Prices are available on request from Cembrit Ltd.





The information contained in this publication and otherwise supplied to users of the company's products is based on the company's general experience, best knowledge and belief. However, because of factors beyond the company's knowledge and control, which can affect the use of the products, no warranty is given or implied with respect to such information.

The company's policy is one of continuous improvement. Cembrit Limited therefore reserves the right to alter specifications at any time and without notice.

As with all manufactured materials, colours and textures of bitumen shingles may vary according to light and weather conditions. It is advisable to ask for samples of bitumen shingles prior to specification and purchase.

Owing to this and limitations of the printing process, colours of bitumen shingles in this brochure may only be taken as indicative.

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