



Looking UP

a guide to roof re-tiling, extensions and repairs



creating **better** living



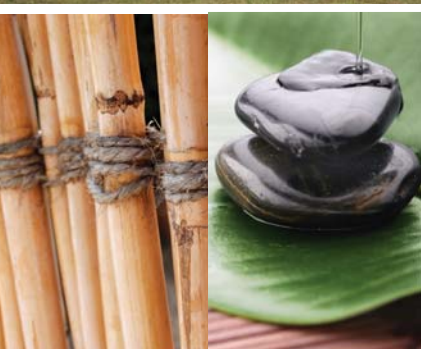


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Introduction



Roofing services to improve your home life

If you are extending or maintaining a home over "a certain age", then this guide is for you. It contains information on Boral's roofing services, including top energy-saving measures for the roof space and answers to questions we are frequently asked by home owners.

The roof is your home's first line of defence against Australia's harsh environment – and it cops a beating. It's also a big opportunity to take passive control over indoor air temperature and even dust. That's why we look at how a roof replacement can be the single greatest improvement to your home's appearance, value and five star performance.

Did you know? Roof tiles by Boral are

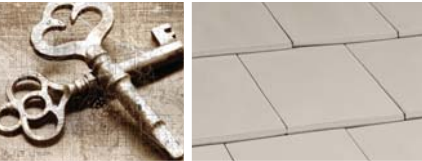
- ✓ Available in affordable Concrete or premium Terracotta in over 35 modern colours
- ✓ Suitable for rainwater collection
- ✓ Designed to achieve a roof pitch as low as 15 degrees
- ✓ Salt-safe and frost resistant
- ✓ Great thermal performers due to their mass
- ✓ Fire resistant
- ✓ Better for sound insulation
- ✓ Virtually maintenance free
- ✓ Built to last with a 50 year guarantee

When it makes cents to re-tile



Faded, mossy, old tiles? Rainwater leaking into the roof space? Or maybe it's your gutters and downpipes that could do with an overhaul.

Don't let a dowdy old roof bring the whole house down. As the home's single largest surface area, the roof not only sets the visual tone but plays the leading role in protection from the elements.



If you have an older home that requires general roof maintenance or it's time for an extension, it makes sense to consider the benefits of an actual roof replacement as a one-off long-term solution.



This is particularly relevant to older roofs, as roof performance will deteriorate with age.



Advantages of a new roof

When prevention is better than cure

- ✓ Instantly update the look of your home and enhance your streetscape
- ✓ At once fix any cracks or leaks and prevent them from recurring
- ✓ Forget the hassle of trying to match old tiles
- ✓ Install underlay protection called sarking if your roof doesn't have it
- ✓ Incorporate better insulation and ventilation measures to improve indoor comfort



A home renovation or extension is the other major reason to take a closer look at your existing roof.

This is especially vital if you are planning a cathedral or raked ceiling, which need extra precautions against summer heat build-up. In inner city areas where home owners may not have the luxury to extend outwards, many are going upwards and converting attic spaces, which can be a good way to gain an extra room.

With their superior thermal and acoustic properties, together with the rising prices of steel, roof tiles remain a popular option. Boral has a large range of colours and profiles to match existing tiles, however if the existing roof is very old or has no sarking, a roof replacement should be a key consideration.

It's often easier than you think to completely update the look of your home while at the same time improving the comfort of your family. But before you can decide whether to replace tiles, re-spray or re-roof, a thorough roof assessment is required.





The 7-step roof check

1. Check roof for any cracked tiles, displacement or build-up of debris
2. Check old cement mortar bedding
3. Check flashings, gutters and downpipes
4. Check whether sarking is installed as a barrier against dust, storms and bushfires
5. Check for sufficient ventilation to remove hot air or damp air
6. Check for the need to re-insulate the ceiling with bulk insulation
7. Assess the need to replace individual tiles, re-spray or re-roof and sark

Boral always recommends that you use a qualified roofing tradesperson to undertake a roof assessment.

DEMYSTIFYING ROOF RE-SPRAYS

Many companies, including Boral in Queensland, offer roof re-coating or re-spraying as an option to rejuvenate concrete tiles. This is because over time the sheen coat on concrete tiles will fade, unlike terracotta which is kiln-fired and colour-fast.

The important point to remember is that roof re-sprays are for aesthetics only. A regular painted coating over your tiles does not fix cracks or leaks and will not enhance the performance of your roof. Further, if your tiles are old and cracked, having anyone standing on them will increase the risk of damage. It's this aspect that can make roof re-sprays not what they're cracked up to be.



TIP: The benefits of a roof replacement often outweigh the cost when extending.

How to enviro-proof your roof



This is a golden opportunity to improve the effectiveness of your roof's current contribution to thermal efficiency, as it is the number one source of heat gain or loss.

Installing roof and ceiling insulation can save up to 45 percent on artificial heating and cooling energy, according to the Department of Environment, Water, Heritage and the Arts. There are two major considerations to ensure you get the most out of your roof: insulation and ventilation.



Insulation & ventilation: it's as easy as A, B, C

- A.** Sarking under tiles to reflect radiant heat and provide a water - and dust-proof barrier
- B.** Bulk insulation between ceiling joists to block heat gain and loss
- C.** Whirly birds to ventilate and inhibit condensation

Insulation

The roof and ceiling work together using two types of insulation to stop the transfer of different types of heat: radiant heat from the sun through the tiles; and convection heat through the ceiling.

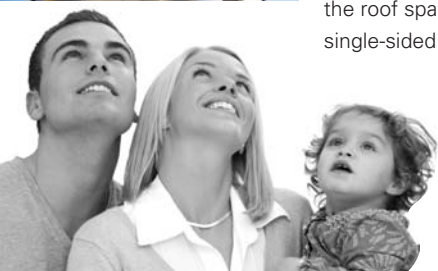
The number one defence against radiant heat is a non-flammable thin membrane called sarking, also known as reflective insulation or reflective foil laminate (RFL).

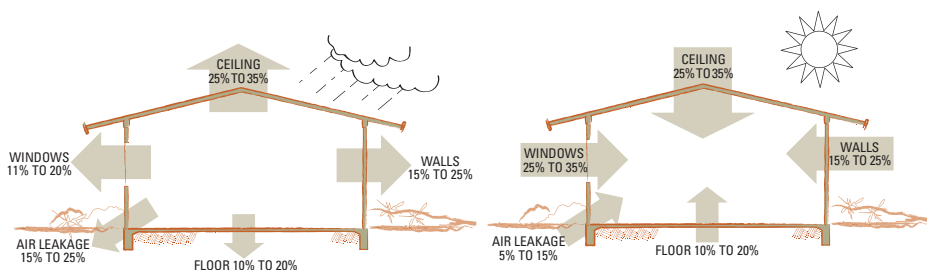
Bulk insulation or ceiling batts combat the effects of convection heating from the roof space. Remember while ceiling insulation is easy to retro-fit if the roof space is accessible, sarking can only be installed during construction or re-tiling.



Ventilation

Whirly birds work to reduce both heat and moisture in the roof space and is equally important all year-round. Installing whirly birds on opposite sides of the roof space allow for cross-ventilation, which is more beneficial than a single-sided whirly bird as it facilitates greater air movement.





Source: SEAV Insulation Guide



TIP: Sarking provides the ultimate protection against the wet, the heat and the dust, but can only be installed during house construction or a re-roof.

SARKING MATTERS

Boral always recommends sarking, and it is mandatory under Australian Standards if:

- Your home is located in an area with a wind classification greater than N3 or more than (W41);
- The roof pitch is between 15 (the minimum for tiles) and 20 degrees;
- The roof pitch is between 20 and 22 degrees and rafters exceed 5.5m in length (excluding eaves);
- Roof rafter lengths are greater than 6 metres (excluding eaves) at a pitch above 22 degrees;
- Local regulatory authorities require it – such as in bush fire prone areas where embers can fly into the roof space, and in high wind areas.



Choosing a Boral roof tile



Now that you're ready to make a selection, it's reassuring to know that Boral roof tiles are manufactured in Australia for Australian conditions and are guaranteed to last. We have an extensive range of colours and profiles that match older tiles for extensions, or if you have decided to re-tile the whole roof, follow these 4 steps.



01. Material

Natural beauty of Terracotta

Impeccably crafted from select clays, our terracotta range embodies a natural quality that cannot be replicated. Benefits include UV resistance and superior colour-fast properties, together with smaller tile profiles for great design flexibility.



Enhanced versatility of Concrete


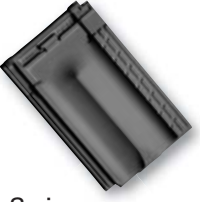





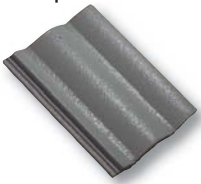
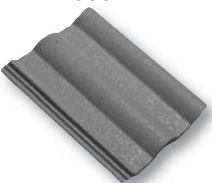

Concrete tiles are Australia's most popular choice for value for money. Made from durable concrete to strict strength specifications, Boral's extensive range provides outstanding affordability with proven performance.






02. Profile

Choose from the striking slim profiles in our Flat ranges or the timeless curves of our Shaped roof tiles. Either way, we know you'll feel right at home. The profile of each tile's shape and design at its cross-section, work together to provide a roof's distinctive character.

TERRACOTTA RANGE		CONCRETE RANGE	
Flat roof tiles	Shaped roof tiles	Flat roof tiles	Shaped roof tiles
<p>Shingle</p> 	<p>French</p>  <p>Swiss</p> 	<p>Striata</p>  <p>Linea</p>  <p>• Uno</p> 	<p>• Contour</p>  <p>Macquarie</p>  <p>• Windsor</p>  <p>• Slimline</p> 



TIP: You'll be surprised at our range of colours and profiles that match older tiles for extensions.

- Windsor available in QLD only
- Uno available in VIC only
- Slimline available in NSW and VIC only
- Contour available in NSW and VIC only

Choosing a Boral roof tile



03. Colour & Finish

Not only is there a vast array of new colours on offer, there are also several options to enhance for the final finish of each tile. Our terracotta range features four finishes from matt through to glazed; while in concrete, choose from the vibrancy of our 'Colour-On' application or the longevity of 'Colour-Through'.



TIP: Choose the lightest permissible coloured tile, which can lower the air temperature in the roof space by up to 9°C.

TERRACOTTA RANGE



Accent™ Ridging

CONCRETE RANGE



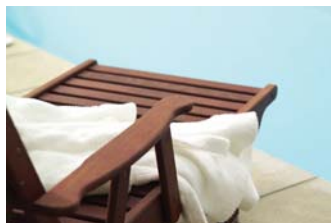
Seamless Ridge Capping

04. Accessories

Hardly a case of optional extras, Boral's accessories can make all the difference to the final outcome. They include sarking for sub-tile protection and two ridging products for the ultimate sleek finish: Accent Ridging™, for Terracotta tiles and Seamless Ridge Capping for Concrete tiles.

BORAL ATTRACTS NEW FANS

With the help of architects and designers, Boral has created fresh modern colour palettes across its terracotta and concrete ranges. From new neutrals to charcoals, these colours signal a new era in tiled roofs, with an emphasis on lighter cool shades and matt finishes. Incredibly versatile, they can be applied across any house style, from coastal retreat to country estate to compact urban dwelling.



Frequently asked questions

1. Can I choose Boral tiles even if my old tiles are another brand?

Yes you can, as your roof tiler should be able to work around different tile widths. If you are looking at re-tiling the whole roof, assess the condition of the existing timber battens, which support the tiles, as well as the sarking underlay that lies beneath. If either needs to be replaced, or you don't have sarking, a re-roof is the recommended option. For extensions where you don't want to re-tile the whole roof, Boral tiles in the closest match can be installed on the new roof plane.

2. What if I have an old metal roof and would like to change to tile?

It all depends on the load capabilities of the existing roof frame, as tiles are heavier than metal sheeting. If you have a trussed roof frame, which comprises triangular units that are self-supporting to a pre-calculated load, an engineers report will determine what this is. Conventional roof frames (also called stick built roof frames) are constructed on site during the house framing phase of construction. They are more flexible, as they can shift the weight of the roof system to load-bearing walls. Tiled roofs require a load capacity of 60kg per square metre.

3. How can I make my roof as energy efficient as possible?

The major source of a home's heat gain or loss is through the roof, which in turn places a huge load on energy requirements for cooling and heating. The density of roof tiles makes them a more effective barrier against the climate and this multiplies when combined with effective insulation and ventilation. Think sarking, bulk insulation in the ceiling or whirly birds. Finally, choose the lightest colour permissible in your area. This measure alone can lower the temperature in the roof space by up to 9 degrees.

4. What is the sheen on new concrete tiles?

A tinted acrylic sealer is applied to concrete tiles for protection against efflorescence, which appears in the early stages as a whitish discolouration caused by mineral salts migrating to the surface. This has no impact on performance and weathers away over time, as does the sealer, which is designed to last only these initial years. Unlike terracotta tiles, concrete tiles are not glazed, so as with other building materials subject to UV radiation, they will lose some colour over time.

5. Does Boral recommend spraying roofs with colour?

Depending on the material and method used it is completely acceptable to re-spray concrete roof tiles to enhance the colour. However, it must be understood that this will not enhance performance and if the roof is old, you could be much better off re-tiling. Never re-spray terracotta tiles, as the colour coat applied will peel away from the glazed surface over time.

Frequently asked questions

6. Is there a temperature difference between colours?

Yes, the colour of any exposed surface determines the amount of solar radiation which will be absorbed and transmitted. Most of Australia has a climate, which requires the roof to limit heat gain rather than be concerned with heat loss and more home builders are recognising the opportunity to select a lighter colour. You can view Boral's BASIX colour ratings online at www.boral.com.au/lookingup or call us on **1300 363 072** to order a Colour Ratings Fact Sheet.

7. I live in a high wind area – are tiles suitable?

Strong winds cause extensive damage to Australian roofs each year. Most people don't realise that the added weight of tiles actually helps to counteract uplifting wind forces during storms. Another consideration is the relative ease at which individual concrete or terracotta tiles can be refixed or replaced after a severe storm, compared to large metal sheets. Boral offers an additional fixing system for high wind areas and recommends sarking as an added protection barrier.

8. Is rain collected from my roof tiles safe to drink?

All Boral roof tiles have non-toxic surface finishes and comply with the World Health Organisation Standard for drinking water. No lead, cadmium or other heavy metals are used in Boral's formulations, as recommended by the Environmental Protection Agency, but you should also check catchment accessories such as flashings, which are used at the intersections and projections in a roof. Extra measures such as filters and a first flush system are required to remove dust and contaminants from collected rainwater that you plan to drink. Call your council and water supplier for details on rebates and regulations.

9. Do concrete tiles absorb moisture?

A common fallacy is that roof tiles are impacted by water absorption during severe downpours. However all Boral roof tiles comply with strict Australian Standards, which specify a maximum absorption of 10 per cent of their own weight. Our tests over many years continue to show an absorption rate of only 4.5 percent after being fully immersed in water for 24 hours. Tiles actually absorb less water with age and never does it affect weatherproofing performance.

10. What else do I need to know about roof maintenance?

Finally, it really does pay to regularly check gutters to clean out debris that can cause blockages and pooling on roofs (great mosquito breeding grounds) – or on the other hand, provide fuel for bush fires. Consider installing a mesh gutter guard to keep your gutters leaf free, particularly if you harvest rainwater from the roof.



Installation and roofing services

Boral Roofing is one of Australia's leading roof tile manufacturers, with more than 30 years of experience in producing terracotta and concrete tiles for Australian conditions. But getting a great roof depends on more than just high quality tiles.

To be sure your roof is installed to the correct specifications, Boral works with a network of preferred professional installers. So for any roof alteration or addition to an existing home, please call Boral on **1300 363 072** for a referral. We will do our best to recommend an installer near you.

Boral's Supply Service



50-year product guarantee



Accessories including whirly birds, chimneypots & skylights (not in Vic)



A recommended network of installers



Obligation-free quotes



Seven year warranty on workmanship



OH&S and work cover compliant



Roof recoating and cleaning offered in QLD only



Build better with Boral

Boral Limited is Australia's largest building and construction materials supplier.

As well as roof tiles and accessories, we produce bricks, pavers, windows, plasterboard, timber flooring, retaining walls and more.

All to help you capture the style and character that makes your home yours.



creating **better** living



Boral roof tiles

For more information about Boral roof tile products:

call us on 1300 363 072;

visit our website at www.boral.com.au/lookingup; or

drop into a Boral Selection Centre at the following locations:



ACT

Fyshwick

16 Whyalla Street
Fyshwick ACT 2609

NEW SOUTH WALES

Albion Park

Boral Select
49 Durgadin Avenue
Albion Park NSW 2527

Albury

Three G Building
653 Dean Street
Albury NSW 2640

Alexandria

Home Ideas Centre
61-63 O'Riordan Street
Alexandria NSW 2015

Badgerys Creek

Martin Road
Badgerys Creek NSW 2170

Ballina

Mills Bricks & Pavers
Racecourse Road
Ballina NSW 2478

Castle Hill

Boral Select
6 Hoyle Avenue
Castle Hill NSW 2154

COFFS HARBOUR

Cnr Hi-Tech Drive and Craft Close
Toormina NSW 2452

Kempsey

South Street
Kempsey NSW 2440

Newcastle

21 Pendlebury Road
Cardiff NSW 2285

Port Macquarie

209 Lake Road
Port Macquarie NSW 2444

Revesby

Hiland Building Centre
7 The River Road
Revesby NSW 2212

Tamworth

Boral Selection Centre
49 Gunnedah Road
Tamworth NSW 2340

Wagga Wagga

385 Edward Street
Wagga Wagga NSW 2650

Wyong

Boral Select
154 Pacific Highway
Wyong NSW 2259

QUEENSLAND

Darra

Harcourt Road
Darra QLD 4076

Gold Coast

Cnr Nerang Southport
and Ashmore Roads
Ashmore QLD 4214

Lawnton

Lawnton Pocket Road
Lawnton QLD 4501

Sunshine Coast

494 Maroochydyore Road
(turn at Pike Street)
Kunda Park QLD 4556

VICTORIA

Ballarat

HBR Group
1 Industrial Court
Delacombe VIC 3356

Bendigo

Hume & Iser Building Centre
35-37 Charleston Place
Bendigo VIC 3550

Caroline Springs

1037 Western Highway
Caroline Springs VIC 3023

Echuca

Rich River Brick & Tile
31 Murray Valley Highway
Echuca VIC 3564

Leongatha

Shield Master
South Gippsland Highway
Leongatha VIC 3953

Shepparton

O'Sullivan Bricks & Windows
8 Mercury Drive
Shepparton VIC 3630

South Geelong

West Coast Roofing
Unit 2/12 Crown Street
South Geelong VIC 3220

Thomastown

2 Trawalla Avenue
Thomastown VIC 3074

Wantirna South

191 George Street
Wantirna South VIC 3152

Warrnambool

South West Roofing
17 Dickson Street
Warrnambool VIC 3280

Calls charged at local rates. Call charges may be higher from mobile and pay phones. Product information contained in this leaflet is correct at the time of printing however is subject to change without notice. Colours shown are indicative only and should not be used for final selection. Colours are subject to change without notice. Check print date prior to product selection. Roof tile colours may vary in shades throughout the manufacturing process therefore it is important that roof tiles are blended consistently across the roof. Boral Roofing will replace any roof tile which fails the Australian Standard 2049 roof

tiles. Please ask for a copy of the Boral Roofing 50 year guarantee before making your purchase. During transportation and installation small blemishes such as scuffing and chip marks may occur. These are not considered a production fault and will not detract from the performance of the roof tile. © copyright Boral Montoro Pty Limited – all rights reserved 2009. TM Terracotta Shingle is a trademark of Boral Montoro Pty Limited. TM Accent Ridging is a trademark of Boral Montoro Pty Limited. Boral Montoro Pty Limited is trading as Boral Roofing ABN 34 002 944 694. Print date February 2009.