



**PROPOSAL FOR CHANGE –
NATIONAL CONSTRUCTION CODE SERIES**

MANDATORY SARKING OF TILE ROOFS

BCA Volume One:	n/a
BCA Volume Two:	{insert Vol. Two clause number – or N/A}
PCA Volume Three:	N/A

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The proposal [\[CTRL + click here for guidance\]](#)

The proposal is to mandate sarking of Tiled Roofs in all States and Territories by modification and deletion:

1. NCC Volume 2 - 3.5.1.2.(f) to state, "Sarking must be installed under tiled roofs."

Delete reference to Table 3.5.1.1b

2. NCC Volume 2 - 3.5.1.2 (h) (iii) sarking installed from ridge to the point of discharge and extended down to the eaves gutter.

- Victorian Building Commission mandates sarking of all roofs in Bushfire prone zones
- BASIX requires Reflective Insulation sarking under dark roofs to meet Thermal Comfort requirements
- Minister for Infrastructure and Planning Stirling Hinchcliffe said it was proposed that from May 1, 2011, the Building Code of Australia (BCA) be amended to require all tiled roofs on new buildings be sarked. This is a waterproofing measure that involves laying sheet material under the tiles to prevent wind-blown rain from entering the roof space.
- A CSIRO report concluded " Sarking or equivalent measures to prevent external moisture penetration should be adopted for all roof constructions in Australia to prevent nail plates pull out"
- Reflective Sarking can contribute to 6 Star Energy Rating
- Sarking will prevent leaves getting into roofs space and falling on downlights causing ceiling fires



The current problem [\[CTRL + click here for guidance\]](#)

2. What problem is the proposal designed to solve?

Water ingress into buildings is one of the main causes of structural deterioration.

Sarking acts as a secondary skin to tiled roofs to prevent water leaking into ceiling space via cracked tiles, gaps in tiles and excessive water pressure during rain storms on tiles near the eaves gutters.

During storms, much of the water damage is caused by water entering buildings through, unsarked tiled roofs.

Nail plate back out can happen over time due to repeated swelling and shrinkage of the wood under moisture/humidity variations in the roof space over time. This is reported as an issue mainly for unsarked houses.

Dry leaves work their way through the gaps in tiles and get into the ceilings of tiled roofs thus causing a potential fire hazard specially around down lights.

What evidence exists to show there is a problem?

1. James Cooke University Technical Report No TR55, April 2009
"Investigation of Performance of Housing in Brisbane following storms on 16 and 19 November 2008"

This report also recommends that the BCA be reviewed to investigate possible amendments to the weatherproofing requirements to:

- Specify that tile roofs constructed in all wind areas be required to have sarking installed

Media Statements



Media release

Minister for Infrastructure and Planning
The Honourable Stirling Hinchliffe

Building changes are in the wind

Minister for Infrastructure and Planning
The Honourable Stirling Hinchliffe

Monday, November 16, 2009



Building changes are in the wind

Damage from the massive storm cell that ripped through western Brisbane last year is the catalyst behind the State Government's decision to push for new storm-proofing measures to be included in new buildings.

Minister for Infrastructure and Planning Stirling Hinchliffe said it was proposed that from May 1, 2011, the Building Code of Australia (BCA) be amended to require all tiled roofs on new buildings be sarked.

This is a waterproofing measure that involves laying sheet material under the tiles to prevent wind-blown rain from entering the roof space.

"One year ago today a storm cell unleashed winds of up to 150km/h at The Gap, Keperra and Enoggera, resulting in significant damage to many homes and structures," Mr Hinchliffe said.

"Following the storm, the James Cook University Cyclone Testing Station carried out a study of the damage to identify its causes and to see what building safety issues needed to be addressed.

"While much of the damage was caused by the freak winds bringing down whole trees and boughs, the study also found that water entering buildings through undamaged, unsarked tiled roofs was a major cause of damage, and one we could do something about.

"The BCA currently requires a waterproof sarking membrane to be placed under some tiled roofs, depending on their pitch.

"The university study found that there was merit in amending the building code to require all new tiled roofs to be sarked.

"BCA already recognises that sarking is a cost-effective way of insulating buildings to meet energy efficiency requirements, so there should not be significant extra costs involved in requiring all new roofed tiles to be sarked for water-damage purposes."

The department will discuss the amendment with the Australian Building Codes Board at its next meeting in March, to see if will be adopted nationally or as a Queensland variation.

Contact: Mr Hinchliffe's office: 3227 8425

2. Forrest & Wood Products Australia Research Paper Mechano-Sorptive Nailplate Backout in Nailplated Timber Trusses

Author: P. Paevere, M. Nguyen, M. Syme, R. Leicester, K. Ho

Date: 30/04/2009 Reference Number: PNB036-0607

3. Sarking Tiled and Metal Roofs is already mandatory in Bushfire prone zones with BAL 12.5 –BaL 40.



The objective [\[CTRL + click here for guidance\]](#)

4. How will the proposal solve the problem?

Sarking in roofs act as second skin in case of the primary roof cladding fails to keep out water ingress. When installed according to AS 4200.2, the water is discharged to the gutter.

5. What alternatives to the proposal (regulatory and non-regulatory) have been considered and why are they not recommended?

If metal sheets are used instead of tiles, there is less likelihood of water ingress, dust, leaves getting into roof space. However, this may not be acceptable to the public as an only solution.

Besides, in Bushfire prone zones, even metal sheet roofing must be sarked.

The impacts [\[CTRL + click here for guidance\]](#)

6. Who will be affected by the proposal?

- Home owners
- Home Builders
- Architects
- Councils
- Insurance companies
- Sarking installers
- Sarking manufacturers

7. In what way and to what extent will they be affected by the proposal?

- Home owners – slightly higher initial cost but a piece of mind for the life of the building
- Home Builders – positive effect, minimize insurance claims
- Councils – help reduce Green House gases in the Councils areas
- Insurance companies – less damage payout in case of wind damage to roofs
- Sarking installers - positive effect, grow their business
- Sarking manufacturers – grow business

Consultation [\[CTRL + click here for guidance\]](#)

8. Who has been consulted and what are their views?

- Roofing Association NSW – Fully supportive, about time, this will have a very positive effect on their members.



- Timber Frames Association – Fully supportive, they have been lobbying for mandatory sarking as well
- James Cooke University – To be contacted
- CSIRO – to be contacted
- BD-058 AS4200.2 Working Group – Fully Supportive
- Victorian Building Commission – To be contacted
- Tasmania Planning Department – Anthony Livingston
- CSR Monier – Fully Supportive
- Boral Tiles (NSW) – Fully Supportive
- Insurance Companies – To be contacted
- AIA – To be contacted
- AFIA –
- Insulation Australia – To be contacted
- HIA – Not supportive at this stage



GUIDELINE FOR PREPARATION OF A PROPOSAL FOR CHANGE (PFC)

This Guideline has been developed to assist you in developing a proposal to change the National Construction Code (NCC) Series, comprising the Building Code of Australia (BCA) Volumes One and Two; and the Plumbing Code of Australia (PCA) Volume Three. It describes the information that should be included when completing a Proposal for Change (PFC) form. Proposals prepared in accordance with this Guideline will assist the Australian Building Codes Board (ABCB) and its stakeholders in assessing the proposal and its potential impact.

Good Regulatory Principles

A key objective of the ABCB is to establish building codes and standards that are the minimum necessary to achieve relevant health, safety, amenity and sustainability objectives efficiently. Good regulatory practice requires that any proposed change to the NCC must ensure that:

- there is a rigorously tested rationale for the regulation;
- the regulation would generate benefits to society greater than the costs (that is, net benefits);
- there is no regulatory or non-regulatory alternative (whether under the responsibility of the ABCB or not) that would generate higher net benefits; and
- the competitive effects of the regulation have been considered and the regulation is no more restrictive than necessary in the public interest.

These regulatory principles are in accordance with Council of Australian Governments (COAG) *Best Practice Regulation Guide*. Details on the COAG Guide are available from the Office of Best Practice Regulation at <http://www.finance.gov.au/obpr/proposal/index.html>.

Proposal For Change

The PFC process is used by the ABCB to consider technical proposals to change the NCC. Proponents of change are required to provide justification to support their proposal, including:

- a description of the proposal;
- an explanation of the problem it is designed to resolve;
- how the proposal is expected to solve the problem;
- who will be affected and how they will be affected; and
- any consultation that has taken place.



General Principles

Please observe the following principles when preparing your PFC:

- To ensure your proposal is given the best opportunity to succeed, please answer all questions and provide relevant information and justification to support your proposed change. Include relevant evidence, correspondence, research papers, journal articles etc that support your position on this issue. This will assist the ABCB in determining the merits of your PFC. Missing or inadequate information may result in requests for more detail and delay the consideration of your proposal;
- A full Cost Benefit Analysis is not required at this stage, but we do require that some consideration and evidence of impacts (costs and benefits) associated with your proposal;
- If you are uncertain about how much analysis is required, you are encouraged to contact the ABCB Office to discuss your proposal.

Specific guidance

The Proposal

1. What is the proposal?

- Describe your proposal. Explain whether you are proposing a modification or deletion to existing NCC provisions or proposing new provisions.
- Don't forget to identify all NCC parts, sections, referenced documents (including secondary impacts on other provisions) that may be affected by your proposal.
- By including suggested wording to go into the NCC and the reasons behind your wording, you will help those reviewing your proposal to understand what is intended. [\[CTRL + click here to return to template\]](#)

The current problem

2. What problem is the proposal designed to solve?

- In order to understand whether a proposal has merit, an understanding of the problem it seeks to solve must be demonstrated. Clearly state the current problem and describe what caused the problem.
- You need to explain why the current situation requires change, e.g. onerous costs, misinterpretation of intent, etc.

3. What evidence exists to show there is a problem?

- Provide evidence that the problem exists and describe both the extent and effect of the problem.

Rather than simply stating that there is a problem, back up your statements with evidence of occurrences, but ensure that any information provided is directly relevant to the proposal. [\[CTRL + click here to return to template\]](#)



The Objective

4. How will the proposal solve the problem?

- Demonstrate how your proposal will solve the problem and explain how your proposal will provide a better outcome than the current situation, for example, increased safety or greater national consistency.

5. What alternatives to the proposal (regulatory and non-regulatory) have been considered and why are they not recommended?

- Remember that regulation should always be a last resort. Could a non-regulatory option address the problem as effectively?
- Sometimes, education and training achieve the same outcome without the costs to business, or the market may already be dictating the change and regulation is unnecessary. Alternatively, if regulation is deemed necessary, is the NCC the appropriate regulatory tool or is there a non-regulatory solution available? [\[CTRL + click here to return to template\]](#)

The Impacts

6. Who will be affected by the proposal?

- Regulatory change can affect a wide range of people, e.g. manufacturers or installers of products, consumers, designers, regulators. You need to identify all affected parties as a first step in understanding what the likely impacts of the proposal will be.

7. In what way and to what extent will they be affected by the proposal?

- Describe the way affected parties will be impacted by the proposal and the extent of the impact. Avoid making generalizations and use examples where possible.
- Include both positive and negative impacts. It is important to address all impacts e.g. an economic cost, but an environmental benefit. You should make an attempt to show that the benefits will outweigh the costs to provide a 'net benefit'.
- 'Costs' are usually quantifiable e.g. extra 10% cost for additional materials. However, 'benefits' (such as improved health, safety, amenity, and sustainability) can often be intangible and difficult to attribute a dollar amount to. In such instances, benefits can be described in a 'qualitative' manner. Identify who will bear this cost e.g. industry, government etc. Include any evidence to support this. Refer **Attachment A** for further guidance on likely costs and benefits.
- Compliance costs are costs to business such as reporting requirements, record-keeping or training costs. Identify only 'additional' costs arising from the proposal.
- It is important to consider whether the regulatory proposal will affect the number and range of suppliers or grant exclusive rights for a supplier to provide a good or service. This is called 'effects on competition'. [\[CTRL + click here to return to template\]](#)



Consultation

8. Who has been consulted and what are their views?

- Identify who you have discussed the proposal with and the feedback that you received. Describe the extent of support, or otherwise, for the proposal.
- Industry and community stakeholders can provide first-hand knowledge of the impacts associated with regulatory proposals. The affected parties you identified earlier may be able to support your claims. You should provide some evidence of consultation with them. You need to note negative views as well as positive. [\[CTRL + click here to return to template\]](#)

When complete, submit your proposal through the PFC upload page at <http://www.abcb.gov.au/consultation/proposal-to-change-the-ncc/proposal-for-change>



ATTACHMENT A

EXPECTED ECONOMIC, SOCIAL AND ENVIRONMENTAL IMPACTS OF THE PROPOSAL AS LIKELY BENEFITS AND COSTS

Benefits and costs are terms used to describe the positive and negative effects of a proposal. A benefit includes any item that makes any person better off, regardless of whether it can be easily measured or quantified.

A cost is any item that makes someone worse off, or that reduces a person's sense of wellbeing. Cost items should include 'opportunities forgone' because a particular proposal has been adopted.

Costs to businesses — including small business — might include:

- 'paper burden' or administrative costs to businesses associated with complying with and/or reporting on particular regulatory requirements;
- licence fees or other charges levied by government;
- changes likely to be required in production, transportation and marketing procedures;
- shifts to alternative sources of supply;
- higher input prices; or
- restricted access to markets.

Costs to consumers may include:

- higher prices for goods and services resulting from restrictions on competition;
- reduced utility (quality, choice etc) of goods and services; or
- delays in the introduction of goods to the marketplace and/or restrictions in product availability.

Costs to the community and/or the environment may include:

- environmental degradation or pollution;
- reduction in health and safety;
- undesirable redistribution of income and wealth; or
- lower employment levels or economic growth.

Costs to government may include:

- running education campaigns/providing information;
- administration of licensing/inspection services;
- collection and collation of business information; and
- enforcement costs.



Benefits

The benefits of the options to business, consumers, government, other affected groups and the community at large should be identified and described. Many benefits may not be readily quantifiable. Examples of benefits include:

- improvements in product and service quality;
- availability of a wider range of products and services;
- reductions in costs or prices;
- reductions in workplace accidents and improvements in public health and safety;
- improvements in environmental amenity;
- reductions in compliance costs for business and administrative costs for government; and
- improvements in the information available to business, the workforce, consumers or the government.