

**BUILDING CODE CLAUSE B2 DURABILITY
PROPOSED CHANGES TO ACCEPTABLE SOLUTION
B2/AS1**

SUBMISSION BY THE

**NEW ZEALAND FOREST INDUSTRIES COUNCIL,
NEW ZEALAND FOREST OWNERS ASSOCIATION,
NEW ZEALAND FARM FORESTRY ASSOCIATION,
NEW ZEALAND PINE MANUFACTURERS ASSOCIATION**

8 AUGUST 2003

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1 Executive Summary

The submitters consider the proposed changes to B2/AS1 requiring mandatory treatment to H1.2 of all timber used in both external and internal framing to be:

- excessive
- unlikely to achieve the desired result
- damaging to the domestic housing and construction market
- damaging to the international reputation of *Pinus radiata*; and
- damaging to the production of Douglas Fir in New Zealand.

The submitters recommend that BIA revise its proposals in respect of timber treatment to require mandatory treatment in “high risk” situations only. They recommend that BIA consult with industry to confirm the definition of “high risk” using as a starting point the analysis of the Weathertight Buildings Steering Group.

2 Introduction

This submission is made on behalf of New Zealand’s forestry industry, as represented by the New Zealand Forest Industries Council (NZFIC), the New Zealand Forest Owners Association (NZFOA), the New Zealand Farm Forestry Association (NZFFA) and the New Zealand Pine Manufacturers Association (NZPMA).

NZFIC is a pan industry organisation for the New Zealand forestry industry. Its members include New Zealand’s largest forest industry companies and key

sector associations (including NZFOA, NZFFA and NZPMA). The Council's mission is to promote the forestry industry's international competitiveness.

NZFOA is a voluntary association representing the interests of commercial forest growers. The Association has 230 members whose forest holdings represent 85% of New Zealand's commercial forest estate.

NZFFA is a voluntary association representing farm foresters and smaller forest owners. It has 3,000 members in 29 branches located throughout New Zealand. Not only do its members grow trees, but the many also have a wide practical knowledge of wood properties and work with timber for practical utilitarian purposes on a daily basis.

NZPMA is a group of some 55 sawmilling and value added wood processing companies. The Association's members represent a significant portion of New Zealand sawn timber output and over three quarters of all New Zealand's solid wood value added production. Their mission is to develop profitable value-added production within New Zealand and expand demand for high quality New Zealand pine products in selected overseas markets.

New Zealand's forestry industry is one of the country's most significant economic sectors. With annual turnover of \$5 billion, annual exports of \$3.7 billion, the forestry industry employs 23,000 New Zealanders directly, including nearly 5,000 Maori. A further 100,000 jobs depend on forestry in some way. The forestry industry is the country's third largest export sector and contributes 4 percent of New Zealand's GDP. Plantation forests cover 7 percent of New Zealand's land area (1.8 million hectares).

The potential for the forestry industry's future development has been recognised by the New Zealand Government through the Wood Processing Strategy which provides a framework for interaction between the industry, central and local government and the unions. The forestry industry's aim is to attract additional foreign investment of \$3 billion by 2010 to enable the further processing of 50% of the expanding forest resource.

The members of NZFIC, NZFOA, NZFFA and NZPMA ("the forestry industry") are suppliers of raw materials to the New Zealand construction industry. The comments contained in this submission reflect a consensus view of the majority of the associations' members. Individual members may have different views on specific aspects of the BIA's proposals which they will present directly.

This submission concerns proposals in relation to B2/AS1 only. The forestry industry is not able to comment on issues which relate to E2/External Moisture.

The New Zealand Building Industry Federation which shares many members with the submitters of these comments is making submissions in respect of proposals to amend E2/External Moisture.

3 Comments on proposed changes to B2/AS1

The forestry industry considers the proposed changes to B2/AS1 requiring mandatory treatment to H1.2 of all timber used in both external and internal framing to be:

- excessive
- unlikely to achieve the desired result
- damaging to the domestic housing and construction market
- damaging to the international reputation of *Pinus radiata*; and
- damaging to the production of Douglas Fir in New Zealand.

The comments below expand on these points.

Comments on the alternative option proposed by BIA are included in section 4 below.

The proposed changes are excessive

The BIA contends that the proposed changes are designed to, inter alia, “address concerns identified in the **Report of the Overview Group on the Weathertightness of Buildings** (Hunn Report) regarding the durability of timber used in domestic construction”¹.

It is significant that the Hunn report made no recommendations concerning the use of treated timber but concluded the problem was the result of systemic failure within the building industry. This resulted in some buildings being constructed where designs were inappropriate, material combinations were “high risk” and poor workmanship in an inadequate inspection environment led to failure of the exterior envelope. The BIA has sought to address some of these issues through proposed changes to E2/External Moisture. Other issues are being addressed through the review of the Building Act.

The forestry industry submits that the proposed changes to B2/AS1 are an over-reaction to the problems identified in the Hunn report. As well as being damaging

¹ BIA Consultation Document, para 1.0

to the interests of the forestry industry for reasons further outlined in this submission, they will not address the root cause of the problem of weathertightness or the specific failures within the building and construction industry that the Hunn report highlighted.

The forestry industry submits that mandatory treatment is not required in all wall framing. It is required in some wall framing. The forestry industry considers that mandatory treatment should only be required in “high risk” situations, such as in certain high risk design situations, decks and balconies.

The industry notes that the Weathertight Buildings Steering Group has made a useful start in defining “high risk”² but that this differs from the proposed definitions outlined in the consultation document in respect of E2/External Moisture.³ The latter criteria appear very wide-ranging and may incorporate some building systems and styles which have not indicated problems to date. Furthermore, the industry is aware that further analysis by the Weathertight Homes Resolution Service will shortly be forthcoming. The definition of “high risk” is therefore an issue on which the forestry industry believes further specific consultation is required.

The forestry industry submits that the BIA’s proposals are not justified by an assessment of the magnitude of the problem of weathertightness.

The Weathertight Homes Resolution Service (WHRS) announced on 24 July⁴ that it had to date received 910 applications in respect of 1,781 dwellings. The forestry industry’s analysis is that this is less than 1 percent of the nearly 230,000 houses constructed in New Zealand since 1992. A high proportion of these dwellings have been in multi-unit developments in Auckland where high risk design and cladding combinations have been used. The BIA’s Regulatory Impact Assessment also summarises the problem in these terms: “*These reports (of building leaks) have involved houses of less than ten years of age with so called monolithic cladding systems*”.⁵

The forestry industry’s analysis of the market share of various cladding systems in current usage, together with a timber application breakdown, reveals that the ‘at-risk’ proportion of timber used in today’s construction is around 14% of total structural timber used.

² Weathertight Buildings Project, Update 28 August 2001, www.weathertight.org.nz

³ Proposed Changes to Building Code Clause E2 External Moisture Volume 1, para 3.0 page 26

⁴ WHRS press release of 24 July

⁵ BIA consultation document, para 1.0, page 26

The forestry industry sees little justification in requiring all framing timber to be treated when much of that – more than 80 percent produced each year according to the New Zealand Building Industry Federation – is used in “low risk” applications such as roof trusses and internal walls. It is simply unnecessary to force all consumers to pay the added cost of mandatory treatment, when cladding systems such as brick veneer, which accounted for 59% of homes in 2002, have no history of problems.

The forestry industry concludes that requiring mandatory treatment beyond the high risk situations noted above is clearly excessive and not justified by the analysis of the causes of the problem of weathertightness as identified in the Hunn Report.

The proposed changes are unlikely to achieve the desired result.

The forestry industry considers that the solution to the problem of weathertightness lies in attacking the root cause, ie those specific high risk design, construction and cladding styles that have been clearly established as creating the unacceptable problem of leaky buildings.

Wood will rot over time if it comes into contact with water and is not allowed to dry out. The focus should be on keeping water out of houses through amendments to external moisture standards (as the BIA is promoting through proposed changes to E2) and to building practices through the Building Code generally. It is not inevitable that all wooden buildings will leak, as has been suggested by a BIA representative at the Green Building Conference held in Auckland in June 2003⁶. Buildings leak only when their design has been inadequate, the workmanship has been unsatisfactory and the inspection has not been sufficient. Successful implementation of measures to address these problems should render unnecessary any so called “second line of defence” through the use of treated timber in all except high risk situations.

The forestry industry is concerned that, rather than addressing the underlying problem, there is risk that homeowners could be misled into thinking that they have taken adequate protection against possible leakage through the measures proposed in this standard. Only timely and effective implementation of building and inspection practices as recommended in the Hunn report will address the substantive problem of weathertightness.

The proposed changes are damaging to the domestic housing and construction market.

⁶ Presentation by Claire Benge, Building Industry Authority, June 2003

The introduction of mandatory treatment will result in unnecessary and significant disruption to the housing and construction market in New Zealand.

In the analysis commissioned by the BIA, the New Zealand Institute of Economic Research estimates that an additional \$4-5,000 will be added to the cost of house construction in New Zealand. This is on top of the 6% estimated to be added to the average house cost as a result of proposed changes to the Building Act currently under consideration. NZIER also failed to consider the impact on existing housing stock built without treated framing. The forestry industry's analysis, made available to NZIER, is for a **“one off” adjustment to existing housing stock of between \$2.5 billion - \$4.8 billion.**

Considerable additional cost will be faced throughout the production and distribution chain by changes to existing production patterns. This will include:

- additional treatment costs
- revisions to health and safety practices
- revised labelling requirements.

As will be outlined below, the forestry industry does not believe these costs have been adequately assessed in the BIA's Draft Regulatory Impact Statement forming part of the consultation documents for the proposed changes.

The requirement for mandatory treatment in all situations also raises a number of issues related to chemicals. At a time when there is heightened (although, in the industry's view, largely unjustified) public concern about potential risks from exposure to chemicals, the forestry industry is concerned that consumers will react negatively to the unnecessary introduction of chemicals inside the home. Perversely this could favour the use of competing building materials such as steel over more environmentally friendly materials such as wood.

The forestry industry is unable to comment on issues relating to the safety and handling of chemicals and whether, as the BIA proposes in its Alternative Option, it is feasible from a safety and handling perspective, to combine the use of treated and untreated timber: these are views which the New Zealand Building Industry Federation is better placed to articulate.

The proposed changes are damaging to the international reputation of Pinus radiata.

The forestry industry considers that the BIA proposals are likely to send negative signals to international markets about the suitability of *Pinus radiata* as a wood for use in higher value market segments. Achieving greater international market recognition is the key to expanding returns from exports of *Pinus radiata* which were valued at \$3.7 billion to the end of March 2003.

The proposed changes can be expected to have a particular impact in developing markets such as China and India. The Chinese and Indian markets have been identified as markets of strong future growth for New Zealand wood products exports. Programmes are underway in both markets to seek regulatory approval for the use of *Pinus radiata* in construction.

This work is most advanced in China. The New Zealand industry has co-operated actively with the Government and agencies including the BIA to ensure that New Zealand pine receives adequate recognition as a structural timber in the new Chinese Building Code. The Code has been finalised and is shortly to be publicly released. A Chinese delegation visited New Zealand at the end of November 2002 for technical discussions with agencies and industry. The Chinese Vice Minister for Construction also visited at the invitation of the Minister of Forestry. Extensive briefings were given about the use of *Pinus radiata* in the local market along with detailed explanations of New Zealand's approach to building regulation. The delegation left with a high level of confidence in the suitability of *Pinus radiata* and its durability qualities. The forestry industry was particularly grateful for the co-operation it received from the BIA during the visit of Chinese officials and is concerned at how the latest proposals may be interpreted by the authorities in Beijing.

There is a risk that much of this work will be undone if the New Zealand authorities were to require mandatory timber treatment in all building situations thus incorrectly highlighting a potential susceptibility of *Pinus radiata* to decay.

The forestry industry does not believe that the potential damage to forest products exports has been adequately assessed in the BIA's Draft Regulatory Impact Statement forming part of the consultation documents for the proposed changes.

The proposed changes are damaging to the production of Douglas Fir in New Zealand.

In general, the forestry industry concurs with the views of the Forest Industry Action Group (FIAG) which is making separate submissions to the BIA on behalf of owners and processors of Douglas Fir. Douglas Fir stakeholders accept that untreated Douglas Fir should not be used in certain high risk building situations i.e. balconies, bottom plates and exterior walls where no drained and ventilated cavities.

Douglas Fir is unable to be treated easily. There is currently no treatment of either heartwood or sapwood undertaken in New Zealand. Heartwood poses particular difficulties in treatment in that it is refractory and effective penetration of the chemical is difficult to achieve.

Douglas Fir has a long history of use in wall and roof framing and was the norm for trusses until its availability declined and drying of *Pinus radiata* become more general. Experience over 50 years in New Zealand and over longer periods in other jurisdictions shows that there is no reason to discontinue its use.

Under the proposed standard, processing and sales of Douglas Fir will be significantly affected. Douglas Fir comprised 103,801 hectares of planted area in 2002 or around 6 percent of New Zealand's total plantation area. Some 70 percent of Douglas Fir is planted in the South Island and small forest owners make up 52% of ownership with the balance held by major forestry operators. Douglas Fir also makes up about 10% of structural timber used in residential applications and is a competitively priced alternative to pine for some regions in the country.

The forestry industry's initial analysis – made available to NZIER - is that the effect of the proposed standard would equate to an annual loss in stumpage of \$13 million based on 2003 harvest level and in excess of \$18 million based on 2010+ predicted harvest levels. This estimate is considered by Douglas Fir stakeholders to be conservative. It does not account for the downstream impact on the facilities that currently process Douglas Fir for the New Zealand domestic market or on the value of sales of Douglas Fir into the construction market especially in the lower half of the South Island. Values of lost sales alone would be in the order of \$25-30 million pa.

Douglas Fir stakeholders consider that the impact will be significantly higher estimating a 40% right-down of forest value. This is because existing export markets for New Zealand Douglas Fir would need to be expanded against strong competition particularly from Canada.

Lastly the forestry industry notes that in Vancouver, Canada, where weathertightness problems have occurred in recent years similar to those in New Zealand and where Douglas Fir is in widespread usage, the response of

regulatory authorities has not been to require timber treatment but to focus on improvements to building practices which are the root cause of the problem. On the matter of timber treatment the conclusion of the Province of British Columbia's Commission of Inquiry was that "*although the merits of rot resistant wood are clear, this would seem unnecessarily restrictive.*"⁷

4 Comments on the Alternative Option Considered

The forestry industry notes the BIA's advice that it considered an Alternative Option under which untreated kiln dried *Pinus radiata* and untreated Douglas Fir could be used in interior wall framing and trusses.⁸

The forestry industry's view is that, while this is certainly an improvement on the principal recommendation under consideration, the Alternative Option remains excessive and unjustified in respect to external framing for the reasons outlined in this submission. In all situations the chief criterion in determining whether treatment should be required should be the degree of risk. Treated timber should be required in "high risk" situations only.

The BIA's comments in respect of potential water damage to interior framing arising from "*plumbing, or roof leaks and problems associated with timber becoming wet during transportation, storage or construction*"⁹ are out of all proportion to the magnitude of the proposed response. These are all problems that need to be dealt with at their source rather than through a blanket, 'one size fits all' response.

As noted above, the forestry industry would rely on the views of the New Zealand Building Industry Federation in respect of the handling of treated and untreated timber.

5 Comments on the Draft Regulatory Impact Assessment

⁷ "The Rebuilding of Trust in Residential Construction Part II Volume II, Commission of Inquiry into the Quality of Condominium Construction in British Columbia", March 2000

⁸ BIA consultation document, page 22, para 6.0

⁹ *ibid*

The forestry industry considers that the Draft Regulatory Impact Assessment seriously underestimates the impact of the proposed changes on the New Zealand forestry industry. The forestry industry has no doubt that the consequences of an excessive response on the BIA's part would reverberate through the New Zealand economy for years to come.

Prior to the release of the BIA consultation document, the forestry industry had the opportunity to submit its own assessment of the economic impact to NZIER. Unfortunately the forestry industry was not given an opportunity to enter into any substantive dialogue with NZIER on its analysis. As a result the NZIER report focuses only on direct monetised costs in the domestic market and fails to take any account at all of the significant costs in terms of export income and the impact on Douglas Fir production.

Set out below is the forestry industry's initial summary of costs resulting from the proposed BIA changes as communicated to NZIER:

- 1) Incremental treatment costs \$29 - \$44million
- 2) Heath and safety costs at sawmills \$4.5 - \$6.7million
- 3) Labelling costs \$1-1.5 million
- 4) Housing stock devaluation \$2.2 -4.5 billion
- 5) Douglas Fir estate devaluation \$13-18 million
- 6) Douglas Fir sales loss \$25-30 million
- 7) Potential export constraints \$200 million
- 8) Costs of productivity decrease in mill \$3.0 – 4.5 million

The total impact assessed by the forestry industry was \$275.5 - \$305 million per annum plus a “one off” adjustment to existing housing stock of between \$2.5 billion - \$4.8 billion.

Not included in these costs were the following:

- Full environmental costs: redrying boron treated timber with the required loadings (0.4 BAE m/m) will result in substantial amounts of boric acid in stormwater and other water sources
- The short to medium term impact of a slowing of building activity in a 'hot' market as mill and frame and truss output falls due to increased processing times. This will be further exacerbated because the timber industry will be unable to fill the increased demand for pine created by the exit of Douglas Fir as an acceptable material.
- The capital costs for the required increase in treatment capacity and dry storage.

It follows from the above that the forestry industry considers that there are significant additional cost impacts from the proposed changes that are not discussed in the draft Regulatory Impact Statement. Consequently the forestry industry cannot agree with the conclusions of the draft Statement.

6 Recommendations

The forestry industry recommends:

- (a) that BIA consult further with industry and other stakeholders about revising B2/AS1 to provide for mandatory timber treatment of *Pinus radiata* in “high risk” situations only and for untreated Douglas Fir to be used in all situations except balconies, bottom plates and exterior walls where there are no drained and ventilated cavities.
- (b) that the definition of “high risk” be the subject of further consultation with industry and other stakeholders
- (c) that the draft Regulatory Impact Assessment be withdrawn and replaced by an assessment that takes account of all the potential impacts including on exports and the Douglas Fir industry
- (d) that industry be invited to co-operate further with NZIER to determine the full extent of the non-monetised costs associated with the BIA’s proposals.

7 Conclusion

The forestry industry submits that proposed changes to B2/AS1 in respect of mandatory treatment for both *Pinus radiata* and Douglas Fir in all situations are excessive, will not prevent leakage in houses in the absence of other measures and are damaging to the forest and construction industry.

The forestry industry strongly recommends that these proposals be revised.