

DRAFT FWPRDC Technology Transfer Plan

For

New Pine Structural Grades

Scope

This is a technology transfer plan (TTP) for implementing revised and upgraded pine grading technology into the market and appropriately informing and advising targeted sectors of the building and related industries. This plan has been produced in conjunction with the Australian Plantation Products and Paper Industry Council (A3P) Solid Wood Marketing Committee and related technical committee. Company representatives on this committee have provided guidance and input which has been used in the development of this plan.

The TTP has been produced assuming that generic elements will be implemented by appropriate consultant(s). It is recognized that individual companies may use or implement elements of this plan in their own company specific market activities and therefore these activities are discussed in this plan so that all aspects of implementation may be considered and coordinated.

Object

The object of this plan is to:

- 1. Ensure that revised pine grading information is efficiently and expeditiously transferred to the marketplace.**
- 2. Transfer the information in a manner that ensures the most efficient and cost-effective use of structural pine products.**
- 3. Be cognizant of QC, production, marking, distribution and other factors which may form part of the information package to different target market segments.**
- 4. Address all target groups as defined in this plan.**
- 5. Ensure that the plantation pine industry is seen to be responsible and open.**
- 6. Ensure ongoing means of transferring information to the marketplace.**
- 7. Set milestones and goals for successful implementation including management committee review.**
- 8. Transfer the information in a manner that ensures market continuity with regard to existing and the revised technology.**

9. Enhance the markets perception of the quality and performance of structural pine framing.

Methodology

This TTP assumes the following:

1. This TTP will be produced in conjunction and guided by the A3P Solid-wood Marketing Committee, representing a significant cross section of structural pine producers.
2. Generic information will be disseminated through the implementation of this plan via the contracted consultant(s) and where possible through related Producer and Distributor Campaigns (PDC). The implementation of this plan and its generic nature will preclude the direction of the PDC.
3. Company specific information will be controlled and available through PDC although the resources and services implemented in this plan must be able to direct in an impartial way the enquirer to company specific information.
4. The existing A3P 1800 information service will be available and have the required capacity during and beyond the implementation of this plan
5. Technical work necessary for the implementation of this plan is assumed to be completed and available within the timeline assumed. This plan has assumed critical dates for completion of technical, QC and other issues as directed by the A3P Solidwood Marketing Committee.
6. This TTP has been produced in the knowledge that technical, market impact and other issues have been considered by the guiding committee.

Introduction

Revised plantation pine grades were introduced into Australia in the early to mid 1990's following testing and analysis of the plantation pine resource and grade outturn then produced by Australian industry. This outcome followed international trends in testing timber in full size lengths and in the grades as determined by the particular grading system and mill production techniques in place at the time – hence the term “ In –grade testing” that was used to describe the testing and original introduction of what was referred to as “MGP” grades.

The introduction of MGP grades necessitated new production and QC procedures at mill level, new marking requirements, the amendment of Australian and industry standards and a significant technology transfer program which took some two years and cost approximately \$500,000.

Ongoing testing of mill output and the plantation pine resource in Australia has lead to the need to redefine machine graded pine to better match resource, grade outturn and production changes over the last 10 years or so as well as greater knowledge of end user

requirements. The grade suite will now incorporate a new set of machine graded pine grades.

These grades have been developed by industry as an alternative to MGP grades. The grades have been developed after considering the requirements of the market for grade properties and variability while retaining efficiency of mill production. Some producers may continue to produce MGP grades for particular markets and for their particular plantation resources.

This plan has been devised on the premise of a medium level expenditure that allows for the fulfillment of the objects of the project defined above. The management committee may seek to revise the program dependant on circumstances as they develop.

The launch of MGP grades involved the targeting of 4 prime areas:

1. Grading & Quality Control
2. Technical Literature
3. Product Identifier & Packaging
4. Market Education & Evaluation

This TTP project will not address all these areas since QC and production changes will be facilitated by the mills and will require revision and subsequent training as required. Therefore, this TTP will predominately incorporate elements of 2 and 4 above. A limited range of technical and non technical literature will be produced (in printed and electronic form) and that there will need to be an education and evaluation mechanism(s)

Technology Transfer Plan

Target Audience

There are four main target audience groups for this TTP, although the plan should remain flexible enough so that other groups (or change in emphasis) may be addressed through the implementation of this plan. The main target groups are all important to this TTP, however, all have differing needs and issues related to the change in pine grades.

The following is a description of the groups and differing issues related to this TTP:

1) **Timber Industry, Producer Company Personnel, Wholesalers, Distributors & Timber Merchants**

It is clear that many timber industry personnel, distributors and merchant personnel have varying degrees of understanding of the pine grading system and its ongoing development.

Producer company, distributor and merchant personnel should be the best informed ambassadors for structural pine products. Producer company (and possibly merchant staff) will be informed of new QC procedures that may apply to the mill and through the marketing channel through generic industry seminars as well as company run information sessions. As the acceptance of structural pine is dependent on issues such as stability; the influence of EMC, handling and climatic influences should be understood. Similarly, the end users responsibility in looking after the structural pine should be understood.

Resources required for TTP: Timber Industry PPoint presentation, Messaging Template and Engineering and Technical Guides. (Access to other resources)

2) **Designers, Specifiers and Building Surveyors**

This group consists of architects, engineers, building designers, draftspersons, quantity surveyors and building surveyors and is arguably the most technically sophisticated especially with regards to building construction. However, it is unlikely that this group is aware of timber grading issues and particularly the determination of grade properties. Nevertheless, it is important that engineers in particular, are aware of the change in structural pine properties as this will be implemented through an amendment of the timber engineering standard AS 1720.1. Draftspersons (also in SA, building estimators) and possibly architects will also be using the timber framing code (AS 1684) and will need to (initially) be made aware of the new span tables. Industry span tables will need to be produced pre-amendment to AS 1684 (if this occurs) which will need to go through the formal standards Australia process. Building surveyors will need to be informed so that there is acceptance of the new span tables before their incorporation in Australian standards.

Resources required for TTP: Technical Guide, Building Industry PPoint, Industry span Tables, Specifiers guide, AS 1684 span tables. www.XXXgrades.com.au and Engineers Certification of Properties

3) End Users

a) Frame and Truss

The frame and truss (F&T) industry processes a large proportion of the structural framing timber produced (around 50 %). The frames and trusses produced are used in new housing; multi-residential construction as well as the very significant addition and renovation market although this last one may feature more stick built construction heavily reliant on the timber framing code or industry span tables (AS1684). The F&T industry uses proprietary design software dominated by 3 major nail-plate producers who licence the software and provide technical support, nailplates and equipment. The nail-plate producers can readily amend the properties of timber products in their software so that changes and additional structural grades are easily accommodated, however getting the message about using new or additional pine grades at the F&T plant level is more difficult. Experience has shown that individual plants and their relation to the timber suppliers often determine their acceptance and satisfaction with the timber and therefore the grade supplied. It is proposed that nail-plate supplier seminars and newsletters be used to disseminate grade information, however, it is important that producer representatives follow-up with their own program of contact. The F&T industry has been the most critical user group and because of the volume of timber used must be a focus of attention in the TTP.

Resources required: XXX Technical guide, Timber Industry & General Building Industry PPoint presentations. Analysis of the effect of grade changes utilizing proprietary software and cost effectiveness analysis. Engineers Certification

b) Other Secondary Manufacturers

This group includes manufacturers of engineered products such as Glulam, LVL, I-beams and others. Quality and uniformity of materials are critical to producing these products and this group will be most discriminating of the claimed properties and property variability but also in particular the ongoing uniformity and quality of the delivered product. Several companies test individual laminates used in production to aid uniformity of the completed product. Completed products may also be regularly tested. This group should be informed as early as practicable so that they may monitor or take advantage of the new properties in their production processes.

Resources required: Technical guide and General Building Industry PPoint presentation. Engineers Certification

c) Builders, Owner Builders and Others

Large volume builders have been at times critical of some aspects of structural pine framing. Their concerns have usually centered on availability and stability issues and it is critical, therefore, that there is an emphasis on these two issues for this group. Changes to structural pine grades will not be as important as the pine processing and distribution industries attention to movement, moisture content, treatment of heart in, low density wood etc.

The owner builder group is generally not discerning of timber grade issues, however, framing table availability and ease of use and product availability will be important. This group may be best served by processor produced flyers available at point of sale and information on 1800 number and website.

Resources required:

Technical guide and General Building Industry PPoint . 6 Pop-up banners. Hard and soft copies of Industry span tables

4) Education System

Universities and TAFES are the subject of an ongoing FWPRDC project for disseminating information from the timber industry. Target audience is building disciplines at University level, whereas, TAFE target is building trades such as carpentry and building courses. Although TAFE and University Hubs are in place, a resource pack will need to be assembled from the following resources and distributed.

Education Pack including: General Industry Power point on DVD, XXX Market Guide, industry span tables CD version and on website, 1800 phone line and www.XXXgrades.com.au

The Resources

A number of resources have been identified in this TTP and they will be available electronically where possible to minimize printing and distribution costs. Moreover, the use of email lists through partners such as the HIA and MBA, Engineers Australia, RAI.A. AIBS, nail-plate supply company lists should assist in efficient distribution at minimal cost.

The following assumption has been made in regards the timetabling of the following resources:

Sign-off of design properties est. mid December 2005

Although this date will preclude the finalization of several of the resources beforehand, several of them can be progressed before the release of final grade properties. This is reflected in the project charts attached to this document.

1. Review of Design Properties

An independent review of methodology of and development of, design properties according to the in-grade testing results and population of structural design properties. A formal report will be produced.

2. Brand Development

Independent development of new grade designator, logo design and concepts for literature and display collateral.

3. Industry Standard

New structural design property standard describing assignment of properties, testing and QC for production. Will revise and update information related to the standards for sampling and other aspects for the new grade including controls on variability. A committee along prescribed guidelines would need to be created and prescribed meeting processes adhered to, particularly to achieve call-up in the BCA

4. ABCB Codemark Scheme

Conformance with Codemark will allow specification in all Australian states and by local government authorities as complying with the BCA. Achievement of Codemark may also be important in achieving inclusion of the Industry Standard and / or design properties and grades into the BCA.

5. BCA Call-up

If the Committee decides to gain call-up in the BCA, a substantial submission including testing and development, industry standard development and other resources would need to be submitted to the ABCB. Several meetings would be envisaged as well as meetings in Canberra with appropriate ABCB committees.

6. 1800 Phone Line

The A3P currently operates an 1800 information line that is operated through the TDA (SA). Call costs and consultation fees are charged to A3P on a monthly basis. There is some concern that the current service would not be able to answer a large number of calls, however, it may be possible for overflow calls to be directed to another state advisory service as appropriate. The 1800 line consultants must be able to answer questions using the messaging template and other resources as a guide, refer clients to website and send generic and company specific information to the enquirer as appropriate. The consultants must be experienced in grade, framing code and other relevant issues. This service will distribute hard copy information and refer callers to the website as necessary.

7. www.XXXgrades.com.au

Set-up and develop a website which could be used by all target audience groups. The site to feature downloadable Pdf's of all printed material including the Specifiers Guide.

Background information, history and major messaging should all be available from the website. The look of the site will be coordinated with A3P and FWPRDC websites as well as the brochure series. The site would incorporate the following features:

1. Means of logging numbers of visitors to pages on the site
2. Links page with details of full list of producers in alpha order
3. Feedback and enquiry mechanism via 1800 number or by email to 1800 consultant
4. Downloadable new Span Tables, Technical and Market guides

8. Engineering Guide

This guide will give a short historical introduction and will concentrate on the critical issues of variability, QC, joint holding etc. An explanation of mean versus 5%ile values. A full technical table of all properties, joint groups and others must feature. This

document must give all the information required by designers, F&T and secondary manufacturers to be able to design their products and applications and make informed decisions.

Main input and guidance on the content must come from the A3P technical committee and should be produced to be comprehensive and understandable to technical personnel as defined above. It is presumed that this document would be produced with the assistance of A3P staff or other nominated industry technical personnel.

9. Technical Guide

This guide will be focused on information required by builders, architects and others. It may have a comparative table of properties against F-grade material and will discuss more general issues of availability of sizes, quality and stability. This document will refer readers to 1800 phonenumber and website for producer information and availability. The guide will have a simplified introduction to XXX grades, refinement of the system and production methodology including machine grading. A realistic evaluation of grades may also feature a visual guide to grades as well as typical applications

10. Industry - Span tables

The new grade span tables will initially be an industry standard with property and design evaluation signed off by CSIRO and /or appropriate consultant in a similar way to proprietary engineered product tables. The document may have a life of around 12 months before an AS 1684 amendment and call-up in May 2007 (or later) BCA can be accomplished. Alternatively, if the industry believes the new grades and associated tables are best administered by industry, then the tables may have an indefinite life. The tables will be produced using the “Timber Span Professional” software used to produce existing AS1684 tables. Format should be the same, i.e. 55 pages. To reduce cost and development time, the tables will initially be web-based and photocopied for designer use. The tables would also be made available in CD version which may be able to be produced on a commercial basis by Standards Australia publishing. A formal span table book or books may be produced, particularly if the industry plans to keep the grades as an industry standard.

11. Messaging Template

As discussed above, the messaging and resources required will vary according to the target group. Naturally, while the generic industry approach to technical issues needs to be consistent, there will be room for producer company literature to reflect the capabilities and possibilities of that particular company including a choice to utilize and produce MGP graded pine or the new grades or possibly both, especially during the transition period.. However, all structural pine grades must be interchangeable or substitutable in a clear manner and the reality is that many different producers' products

may be used in a particular project. A messaging template is one of the resources to be reproduced as part of the TTP.

Messaging will need to be approved by the A3P Solidwood Marketing Committee. The following is examples of some of the messaging that needs to be addressed:

General

- Why have structural pine grades been reassessed?: the changing resource, producer and demand profile in Australia.
- Why have XXX grades?
- What are the recommended applications for the different XXX grades?
- How are xxx grades marked
- Do colour marks on XXX-graded pine have any significance?
- Can I use XXX finger-jointed pine for a truss bottom chord?
- This piece of XXX pine broke at a large knot when I was installing it? Has this been properly graded?
- What is your advice when I stand on the bottom chords of Pine trusses when I install the bracing?

Timber Industry and Production Company Personnel

- How will XXX production and distribution change?
- Will the new grades give the industry an advantage over non-timber competitors?
- How do we take the opportunity of the new XXX grades to further positively position the company, industry?
- How will MGP grades and XXX grades be positioned
- What is the interchangeability between MGP and XXX grades

Designers and Specifiers

- Will all XXX grades be available in volume and when ?
- Are lower XXX grades as reliable as higher XXX grades?
- Are the new grades straighter, more stable?
- Recommended applications

Frame and Truss

- Will all XXX grades be available in volume and when ?
- Will the new suite of XXX grades resolve quality issues previously experienced?
- Has stiffness variability issues been resolved
- Joint nail holding
- Have cost comparative studies been performed?
- Are the new grades available now?
- Is one producer's XXX grade the same as other producers?

- The frame and truss industry would like consistent marking of XXX grades, has this been resolved?
- If “blended packs” (ie with several XXX grades or MGP or F grades in the one pack) are supplied, does F&T plant separate the grades in production. This is an important issue in variability of the final frame product.
- What is the interchangeability between MGP and XXX grades (and F-grades) during transition and long-term

Builders, Owner Builders

- What is the interchangeability between MGP and XXX grades (and F-grades) during transition and long-term
- Are the new grades more economical?
- Will pine be more stable?
- Availability, substitutability and cost (F, MGP and XXX)
- Recommended applications

12) Investigation of Property Changes & Cost Effectiveness Analysis

This investigation would involve the analysis of typical house plans of varying dimension, two storey and at typical wind categories to determine a realistic evaluation of the effect of new XXX grades on truss and frame design for the majority of typical house construction. The comparison could be carried out in conjunction with one of the major nail-plate suppliers and cost comparisons could be carried out on typical cost values and not absolute market costs. The idea would be to give a comparison and not show absolute cost differences and end section utilisation. This could then be used to produce a specific presentation that could be used for representations to individual frame and truss plants but also in the specific F&T national seminars.

13) Specifiers Guide

This web-based resource would provide specifiers and designers with suitable wording describing the use of XXX graded timber framing which could be included in documentation or on drawings. This is expected to be a low cost resource that will be costed into the development of the web-site

14) PowerPoint Presentations on DVD

The consultant would be required to produce 2 versions, while individual companies could adopt these under their own branding and for their clients. It is important that generic elements (e.g. history of development, marking etc) are agreed and remain

unchanged. Both versions of the PPoint to be produced in 10 minute and 20 minute versions, would have a voice over which could be optionally used and incorporate speakers notes so that they can be delivered by competent industry personnel.

a. Timber Industry Version

To include:

- Short history of XXX Development
- Essential differences to F-grading, MGP and XXX grading
- Original market implementation
- Issues with implementation
- Production, QC and market feedback with original launch and implementation
- The reasons for new grades
- Critical issues in new XXX grades
- Getting the message out
- Benefits of the “new” XXX

b. General Building Industry Version

As for Industry version, however concentrating on end-user issues such as straightness, reliability, marking , stocking etc

- The characteristics of XXX and machine grading
- Need for change with changing resource and response to market requirements
- Marking and pack mix, interchangeability
- Straightness and utility issues, joint strength
- What to expect visually etc

Implementation

The following tables indicate the activities proposed to effectively transfer the information developed in the resources identified in the plan.




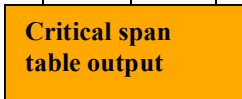









Milestones, Review & Guidance

This TTP requires that a sub-committee of the A3P marketing committee, nominated FWPRDC representative and other nominated industry personnel guide the implementation of this TTP and review milestones at critical dates. The satisfactory achievement of milestones will be signed off by the management group and any modifications to the milestones or changes to the plan will be endorsed by them.




Resource Development

Item	Activity	Nov 05	Dec 05	Jan 06	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct 06
1. Review Design PPTies	J, Carson confirmation of ppties	■											
2. Brand Development			■										
3. Industry Standard				■									
4. ABCB Codemark				■									
5. BCA Call-up							■						
6. 1800 Phone line	In place. Resources below required.												
7. Web-site www.XXXgrades.com.au	Web-site establishment is fast – need resources			Develop template									
				■			■						
				■			■						
8. XXX Engineering Guide	Development can start immediately final properties available 3 May		■			■		■					
9. XXX Technical Guide	Development can start immediately however properties available 3 May		■			■		■					

SOFT LAUNCH, HIA B'Bane, Frame Aust.

Item	Activity	Nov 05	Dec	Jan 06	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct 06
10. Industry Span Tables (4 grades x 6 wind speeds x 55 tables)	TQ Table Production – 4 tables												
	Reformat to AS1684, output to Pdf on web												
	Format & create CD Version												
	Printed tables												
11. Industry Messaging Template	Development can start when final ppties and grade characteristics												
12. PPoint Timber Industry	Start now												

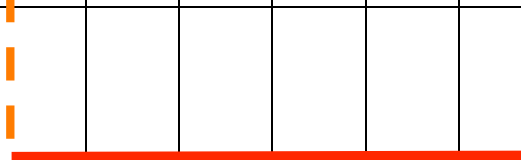
Item	Activity	Nov 05	Dec	Jan 06	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct 06
12. PPoint Building Industry	Start now												
13. Pop-up display banners	Start production when graphic finalized for other elements												
14. XXX Grade change analysis and cost comparo	Star when ppties finalised												

-  Development
-  Proofing/Printing
-  Implementation

3.0 Activity : Journal Articles

Item	Activity	Nov 05	Dec 05	Jan 06	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep 06	Oct 06
3.1	Timber Trade, newsworthy for industry							█	█	█	█	█	█
3.2	Building Industry HIA MBA AIBS Other While newsworthy, may require \$ and leveraging company media spend							█	█	█	█	█	█
3.3	Articles for F&T newsletters							█	█	█	█	█	█
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4.0 Email/ Electronic contact

Item	Activity	Nov 05	Dec 05	Jan 06	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep 06	Oct 06
4.1	Use association lists to contact association members: AIBS, MIEAust, BDA, HIA etc. Place news articles, link to website etc												

Budget

Resource Items

Item	Amount \$	Totals \$	Comment
Resources			
1. Review of Design Properties	15,000	15,000	J. Carson contracting
2. Brand Development		10,000	Development of logos, style guide etc
3. Industry Standard		25,000	Development of an industry standard in lieu of SAI. Requires formal committee structure, public comment and other processes. Output as pdf which can be printed as required. Post on website
4.ABCB Codemark Scheme		30,000	Codemark for package of span tables and deemed to satisfy for BCA.
5. BCA Call-up		10,000	Submission to ABCB requesting calling up of Industry span tables (and possibly standard) in the BCA
6. 1800 phone line est.	300/ month	3,600	Allow for 12 months
7. XXXgrades.com.au Development, uploading etc incl Specifiers Guide development. Maintenance	8,000 3,000	11,000	

8. XXX Engineering Guide Development, 4-page 4 colour Printing (20,000)	10,000 8,000	18,000	
9. XXX Technical Guide Development, 4-page 4 colour Printing (40,000)	10,000 15,000	25,000	
10. XXX Span tables Development and proof (6 week. 4 grades@\$15K Reformat for AS 1684, Pdf, proof etc Independent Certification Printing CD Version, 5,000 off	0 40,000 5,000 80,000 15,000	140,000	CSIRO/engineer ?? Quality span table book. Poss. consider spiral bound “pocket version” Poss. Standards Australia production
11. Industry Messaging Template Contractor Development printing	3,000 5,000	8,000	
12. Timber Industry Powerpoint Devel in 10 & 20 min & notes Script, image selection and voice over & 2,500 DVD’s	5,000 10,000	15,000	
13. Building Industry Powerpoint Devel in 10 & 20 min & notes DVD production of 2,500	5,000 10,000	15,000	
14. Pop-Up Banners 6 banners	13,000	13,000	Style and graphics to match website, literature and PPoints. Production cost \$4,000. Banners @ \$1500 each

15 Property Changes & Cost Comparison	15,000	15,000	Analysis and development into PPoint module. Prefab comparison and stick-framing comparison. Poss. Paul Davis, Tom Donohue, Nail-Plate suppliers
TOTAL		\$353,600	

Implementation

Item	Amount \$	Totals \$	Comment
Implementation			
1.0 Project Management			
Project Manager to organise the development of written and electronic materials, coordinate seminar program, ensure consultants are engaged and project completed within time constraints	0	0	Estimate based on engagement from start May 05 until end October 06. Contributed by Industry
2.0 Seminars			
2.1 Mill QC staff seminar one only	7,000		Consultant time, preparation. Includes travel and some \$ for venue, minimal catering
2.2 Seminars for industry sales & marketing, distributors and wholesalers	36,000		6 Seminars in capitals includes consultant travel exp, venue etc. Cost includes 2.3
2.3 Channel partners	see 2.2		6 in capitals combine with 2.2
2.4 F & T	75,000		13 regional plus 12 metro. Contingency. Meetings with Nail-Plate suppliers.
2.5 Designers & Specifiers	5,000		Contingency
2.6 Builders	5,000		Contingency
		128,000	
3.0 Print Journals			
3.1 Articles for industry trade journals	3,000		Assume consultant time only
3.2 Building industry journals	7,000		Assume some contribution where necessary
3.3 F&T	3,000		Assume consultant time only
		13,000	

4.0 Electronic media			
4.1 Email of links and brochures with announcements.	15,000		Use BDAA,AIBS email newsletters etc. \$ cost is difficult to est.
		15,000	
5.0 Presentations at Conferences & Tradenights			
5.1 HIA national, MBA state, AIBS, BDAA National etc	15,000		Consultant time, travel and contribution where necessary
5.2 Trade nights	15,000	30,000	Average \$600 per trade night plus consultant
6.0 Education through TAFES and Uni	0	0	Output from the TTP will be supplied to the TAFE and Uni hubs of existing FWPRDC education contractors
TOTAL		\$186,000	