FOREVERBEECH™ FLOORING

TECHNICAL INFORMATION

foreverbeech™

Technical Document No.	#011
Title	Foreverbeech™ Flooring
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Version	1.0

foreverbeech™

SOLID TIMBER FLOORING

Captivating beauty unrivalled by any other New Zealand indigenous timber.

Foreverbeech solid timber flooring exhibits a warmth and lustre unmatched by any other New Zealand indigenous timber. Warm, rich tones perfectly showcase clean modern lines. Tone and colour variation is pronounced making Foreverbeech the ideal high-feature solid timber product. Enjoy life's natural beauty and celebrate your individualism with the epitome of Foreverbeech solid timber flooring.

foreverbeech advanced specifications:

- MPI approved timber sources
- High wear and impact resistance
- Precision micro-bevelled profile inclusive of end matching
- No onsite mechanical sanding required
- High stability
- Non allergenic
- Structural performance. Can be installed direct to raised floor joist
- Cutting edge kiln drying and conversion technology
- Complete installation and coating service
- Foreverbreathe™ natural oil coatings
- No nasty chemicals

foreverbeech decorative appearances:

Enhance Foreverbeech™ with Foreverbreathe™ Oil Coatings.

foreverbeech product specifications:

• Widths	85mm and 128mm
• Thickness	19.2mm
• Surface coating	Foreverbreathe™ Oil Coatings on completion of installation

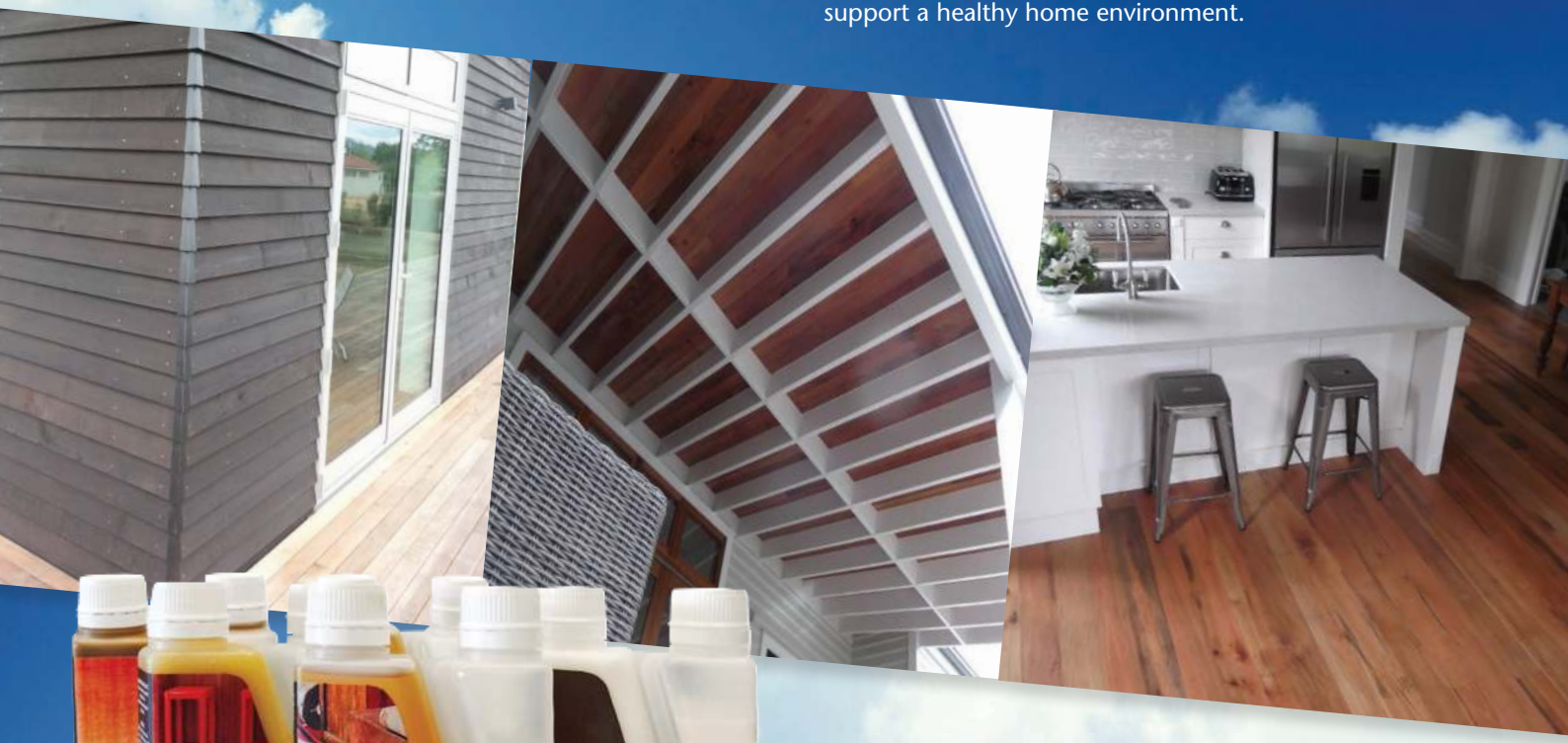
Close-up of end section showing micro-bevel.

NZ90123

FOREVER BREATHE™ OIL COATINGS

Natural. Breathable. Beautiful.

Enhance and maintain the natural beauty of your timber surfaces with Foreverbreathe™ Oil Coatings. Developed using innovative pure plant chemistry, our extensive range of natural oils, waxes and cleaning products provide exceptional performance. Being breathable and free of harmful chemicals they support a healthy home environment.



FEATURES:

- Interior & external applications
- Clear or tinted colours available
- Breathable and free of harmful chemicals
- Made in New Zealand using innovative pure plant chemistry
- Available in four convenient sizes: 250ml, 1L, 4L & 10L

Breathable Vapour Permeable

Pure Plant Chemistry

Made in New Zealand

HEALTH BASED BUILDING™ natural selection

Make your space, a healthy place.

www.healthbasedbuilding.com

FOREVER BREATHE™ OIL COATINGS

FLOORING

Decorative appearance on **Foreverbeech™** (left) and **American White Oak** (right). Available in clear and the colours below.

ANTIQUE | CARUBA | CIGAR BOX | CLEAR | ENHANCER

IRON BARK | KAURI | PROVENCE | RIMU | WALNUT

CLADDING

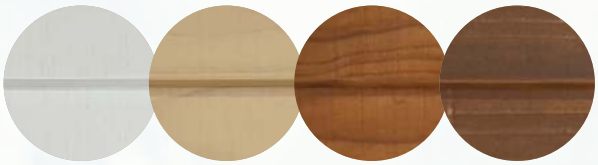
Decorative appearance on **Foreverbeech™**

CLEAR | EBONY | ENHANCER | GRAPHITE

MANUKA | PEARL | TEAK | WALNUT

Decorative appearance on **Earthen Radiata**

LICORICE | MANUKA | PATINA | PEARL



PRE-PRIMED | STRAW | TEAK | WALNUT

DECKING

Decorative appearance on **Foreverbeech™**

CLEAR | EBONY | ENHANCER | GRAPHITE

MANUKA | PEARL | TEAK | WALNUT

Decorative appearance on **Earthen Radiata**

LICORICE | MANUKA | PATINA | PEARL

STRAW | TEAK | WALNUT

Disclaimers: Colours shown are as close as possible to actual oil colours. Please note, due to limitations of the printing process and screen settings, images may not represent the true colour. Always confirm your colour choice with a Foreverbreathe™ test pot.

HEALTH BASED BUILDING™ natural selection

Make your space, a healthy place.

www.healthbasedbuilding.com

IDEATION_NZ50144

foreverbeech™

SOLID TIMBER
Grading / specification

Foreverbeech™ Solid Timber is mostly clear wood. Pictures are included to show decorative appearance includes features. Features enter via tree growth over branch junctions. Small pinhole feature enters via beetle inhabitation in decaying timber while the tree is standing. Features do not impact structural performance. Feature appears randomly throughout the timber. Refer to finished product pictures to establish an accurate understanding of appearance in the built environment.

Foreverbeech™ Solid Timber is a combination of Red Beech and Silver Beech.

Length spec:
0.5m – 1.0m : 20%
1.1m – 2.0m : 60%
2.1m – 4.0m : 20%
Note: Spread of lengths within the above ranges is subject to stock available at the time of picking orders

PROCEDURE TO FINISH FOREVERBEECH MICRO BEVELLED SOLID TIMBER, FOREVERBEECH VENEER & FOREVERBEECH ENGINEERED FLOORS WITH FOREVERBREATHE JAVA HIGH SOLID OIL – CLEAR FINISH

*picture does not necessarily match size

Step one: Preparation: 17-25 degrees C is the target temperature. The objective is to maintain a constant room temperature with good airflow. The surface must be dry, clean and free of grease. Timber moisture content should be no more than 14%. The Foreverbreathe Microclean can be used to remove isolated embedded marks. Add 1 cap full (approx. 10ml) of the Microclean to 1 litre of water in a handy spray bottle. Shake well before use, mist spray the solution over the floor. Use sparingly and only apply to affected areas. Lightly sand the floor in the direction of the grain using the Pole & Sander Head with 120 grit sand screen supplied. It is imperative that Foreverbreathe Java High Solid can penetrate the surface of the timber. IMPORTANT: do not burnish the surface of the timber by trying to achieve a very fine sand! If the filling of knots is desired, use Black "Pal – eeZee – Wood Filler". This is a water based Wood Filler. Apply sparingly to the knot only as per manufacturer instruction. Sand back and remove dust before coating.

Step two: Vacuum

Special care should be taken to remove any dust from the pores of the timber. Vacuum the floor area thoroughly to remove dust and dirt. A light broom may be necessary to move some of the dust caught between boards

Step three: Apply Foreverbreathe Primer, 1st Coat

Mix the primer oil by shaking or tipping the container to allow oil to mix thoroughly and ensure non separation. Empty the primer oil into the roller tray. Application temperature should be between 17-25 degrees C. Use the 50mm brush to neatly apply the oil to areas

where the floor meets walls or door frames before rolling. Roll up to the “cut in” line within 15 min to prevent visible overlap. Using the 6mm microfibre roller, roll the primer oil liberally and evenly onto the timber in the direction of the boards. Leave for 12-24 hours to dry, with good ventilation.

Step four: Apply first top coat Foreverbreathe Java High Solid

The second application should be a fine coat of the Foreverbreathe Java High Solid, on top of the primer. Thin layers dry and cure more efficiently, ensuring a tougher finish. Be careful to prevent build up along edges. Mix the oil by shaking or tipping the container to allow the oil to mix thoroughly and ensure non separation. Pour the Foreverbreathe Java High Solid oil into the clean roller tray. Application temperature should be between 17-25 degrees C. Use the 50mm brush to neatly apply the oil to areas where the floor meets walls or door frames before rolling. Using the 6mm microfibre roller, roll sparingly and evenly onto the timber in the direction of the boards. Leave for 12-24 hours to dry, with good ventilation.

Step Five: Light “Block-Down” Sand

Once the first coat is dry, lightly sand the floor in the direction of the grain using the Pole & Sander Head with the **220 grit** sand screen supplied. Vacuum the floor area thoroughly to remove dust and dirt. A light broom may be necessary to move some of the dust caught between boards.

Step Six: Apply second top coat

Apply the second top coat as the first. Leave for 12-24 hours to dry, with good ventilation.

WARNING: SPREAD OIL SOAKED TOWELS AND CLOTHS OUTSIDE TO DRY. DO NOT LEAVE IN A CRUMPLED STATE OR SELF COMBUSTION CAN OCCUR

Clean up:

Clean brushes/rollers in white spirit, followed by warm soapy water. Safety Instructions: Keep out of reach of children. Do not pour oil residue into the sewer. Let the remnants dry out and dispose of with your domestic rubbish collection.

Initial Floor Care:

Treat all new floor surfaces with great care as they continue to harden for up to 4 weeks. Correctly applied, Java High Solid Oil will cure to good strength after a period of 10-14 days, avoid water contact and do not wet mop before this time. The surface will continue to harden for up to 28 days. It’s advisable to take extra care throughout this time & use felt pads under your furniture etc.

General Cleaning:

Use the Foreverbreathe Microclean for your weekly or regular cleaning. Add 1 cap full (approx. 10ml) of the Foreverbreathe Microclean to a 1l of water in a handy spray bottle. Shake well before use. Mist spray the solution over the surface to be cleaned. Wipe back using a microfiber pad or cloth. Leave to dry.

Nourish & Replenish:

Use the Foreverbreathe Microwax with a 50/50 solution of water to rejuvenate your floor. Use a handy spray bottle. Shake well before use, mist spray the solution over the floor. Mop or wipe back using a microfibre mop, leave to dry.

Manage:

For stubborn marks and surface scratching use undiluted Foreverbreathe Microwax lightly burnished in the direction of the grain using a green 3M hand scourer available at supermarkets. Polish dry with a cotton cloth.

TO REORDER Microwax & Microclean, Please visit our ONLINE STORE
www.healthbasedbuilding.com

PROCEDURE TO FINISH FOREVERBEECH MICRO BEVELLED SOLID TIMBER, FOREVERBEECH VENEER, FOREVERBEECH & OAK ENGINEERED FLOORS WITH FOREVERBREATHE JAVA HIGH SOLID OIL – STAIN FINISH

*picture does not necessarily match size

Step one: Preparation: 17-25 degrees C is the target temperature. The objective is to maintain a constant room temperature with good airflow. The surface must be dry, clean and free of grease. Timber moisture content should be no more than 14%. The Foreverbreathe Microclean can be used to remove isolated embedded marks. Add 1 cap full (approx. 10ml) of the Microclean to 1 litre of water in a handy spray bottle. Shake well before use, mist spray the solution over the floor. Use sparingly and only apply to affected areas. Lightly sand the floor in the direction of the grain using the Pole & Sander Head with 120 grit sand screen supplied. It is imperative that the Foreverbreathe Java High Solid Stain can penetrate the surface of the timber. IMPORTANT: do not burnish the surface of the timber by trying to achieve a very fine sand! If the filling of knots is desired, use Black "Pal – eeZee – Wood Filler". This is a water based Wood Filler. Apply sparingly to the knot only as per manufacturer instruction. Sand back and remove dust before coating.

Step two: Vacuum

Special care should be taken to remove any dust from the pores of the timber. Vacuum the floor area thoroughly to remove dust and dirt. A light broom may be necessary to move some of the dust caught between boards.

Step three: Lamb's Wool Applicator:

Mix the stain by shaking or tipping the container to ensure the stain is thoroughly mixed together. Application temperature should be between 17-25 degrees C. Attach the Lamb's Wool Applicator to the collapsible extension pole provided. Pour the stain into the paint tray

and lightly dip the applicator into the stain. Dab the applicator evenly on the tray spreader to remove excess stain. To apply the stain, wipe the applicator onto the floor, work across the grain to massage the colour into the timber. Continue working with the grain without adding more stain, until appearance is even. Wipe back the excess stain using the second clean applicator pad (or cotton cloth). Wipe in the direction of the grain until the colour is even and there are no visible application marks. Work in manageable areas of approx 4 sqm, blending as you go. If you apply too much stain, wipe the applicator on a cotton cloth and wipe the floor area back to an even finish with a cotton cloth or towel. Edges and corners should be wiped back as you go. Leave to dry, with good ventilation.
IMPORTANT: It is important to leave this coat for 48 hours to thoroughly dry & cure.

Step four: Apply first top coat
The second application should be a fine coat of the Foreverbreathe Java High Solid Clear, on top of the stain. Thin layers dry and cure more efficiently, ensuring a tougher finish. Be careful to prevent build up along edges. Mix the oil by shaking or tipping the container to allow the oil to mix thoroughly and ensure non separation. Empty the Foreverbreathe Java High Solid oil into the clean roller tray. Application temperature should be between 17-25 degrees C. Use the 50mm brush to neatly apply the oil to areas where the floor meets walls or door frames before rolling. Using the 6mm microfibre roller, roll sparingly and evenly onto the timber in the direction of the boards. Leave for 12-24 hours to dry, with good ventilation.

Step Five: Apply second top coat
Apply the second top coat as the first. Leave for 12-24 hours to dry, with good ventilation.

WARNING: SPREAD, OIL SOAKED TOWELS AND CLOTHS OUTSIDE TO DRY. DO NOT LEAVE IN A CRUMPLED STATE OR SELF COMBUSTION CAN OCCUR

Clean up:
Clean brushes/rollers in white spirit, followed by warm soapy water. Safety Instructions: Keep out of reach of children. Do not pour oil residue into the sewer. Let the remnants dry out and dispose of with your domestic rubbish collection.

Initial Floor Care:
Treat all new floor surfaces with great care as they continue to harden for up to 4 weeks. Correctly applied, Java High Solid Oil will cure to good strength after a period of 10-14 days, avoid water contact and do not wet mop before this time. The surface will continue to harden for up to 28 days. It's advisable to take extra care throughout this time & use felt pads under furniture etc.

General Cleaning:
Use the Foreverbreathe Microclean for your weekly or regular cleaning. Add 1 cap full (approx. 10ml) of the Foreverbreathe Microclean to a 1l of water in a handy spray bottle. Shake well before use. Mist spray the solution over the surface to be cleaned. Wipe back using a microfiber pad or cloth. Leave to dry.

Nourish & Replenish:
Use the Foreverbreathe Microwax with a 50/50 solution of water to rejuvenate your floor. Use a handy spray bottle. Shake well before use, mist spray the solution over the floor. Mop or wipe back using a microfibre mop, leave to dry.

Manage:

For stubborn marks and surface scratching use undiluted Foreverbreathe Microwax lightly burnished in the direction of the grain using a green 3M hand scourer available at supermarkets. Polish dry with a cotton cloth.

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www.healthbasedbuilding.com

PRODUCT SPECIFICATION

Product System:	Generic Specification for the Installation of Timber Floor Coverings to a Magnum Board Substrate, Health Based Building, Christchurch
Project Reference:	
Site Address:	
This Specification is intended for the above listed products and all products must be installed in accordance to this product specification and the Technical Data Sheet (TDS) of the products listed herewith.	

1. ADHESIVE

a. Trade Name: Ultrabond Eco 995

Ultrabond Eco is MAPEI's premium 100% solids, one component, moisture curing urethane adhesive for all types of wood and bamboo flooring. Ultrabond Eco can be used in a single coat application method that provides a superior bond with moisture emission control on concrete slabs. Or as a standard adhesive over other substrates not requiring a moisture barrier.

2. Installation over the Magnum Board substrate

a. All framing must be straight and level, with all Magnum Board edges fully supported by joist framing.

b. The substrate should be free of dust, oil, wax, paint or other surface contaminants before the adhesive is applied.

c. Installation of the timber flooring can be carried out utilising Ultrabond Eco 995. A suitable V notched trowel as recommended by the timber manufacturer must be used, notwithstanding a 100% contact of the adhesive bed to the timber flooring.

MAPEI NEW ZEALAND LTD
30 Fisher Crescent, Mt Wellington, Auckland
Tel: +64 9 921 1994, Email:
enquiries@mapei.co.nz Website:
www.mapei.co.nz

3. Warranty

a. MAPEI NEW ZEALAND LTD (MAPEI NZ LTD) provides product warranties, if the products are installed in accordance with the products Technical Data Sheet (TDS) plans, specifications, and complies with the relevant provisions of the New Zealand building code.

b. MAPEI NZ LTD warrants that the product/s when prepared and applied in accordance with the TDS will have the properties and characteristics set out in the TDS and will retain these properties and characteristics for the duration of the listed Warranty Period.

c. The Applicator of a MAPEI product is not an agent or employee of MAPEI and therefore MAPEI takes no responsibility and assumes no liability for their workmanship.

d. The applicator of the product must assess the substrate and the product/s suitability for the intended application and final service provision of the product.

e. MAPEI NZ LTD warranties ***do not*** cover installation, workmanship or product mixing and preparation aspects which is the sole responsibility of the applicator who is not an officer, agent, servant, or employee of MAPEI NZ LTD.

f. It is the sole responsibility of the product applicator to store the product/s, prepare the substrate, prepare, mix, and apply the product/s in accordance to the product/s TDS.

g. Information given relating to the application and use of MAPEI products is given in good faith based on MAPEI's current knowledge and experience of its products when they are appropriately stored, handled and applied under recommended conditions according to the information in the product/s TDS.

h. A full list of all product warranty terms and conditions is available upon request.

MAPEI NZ LTD
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Resilient Line Technical Sales
Email: peter.smith@mapei.co.nz
Mob: +64 292 950 505
DD: 09 921 1996
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FOREVERBREATHE™ INTERIOR OIL MSDS

MATERIAL SAFETY DATA SHEET

1. Identification Of The Material & Supplier

Product Name: ForeverBreathe Interior Oil and Wax

Other Names(s) : Pure Danish Oil

Chemical Characterisation:
Mixture of binding agents based on plant oils, natural waxes, wood rosin and dearomatized hydrocarbons.

Use or Description:
Finishing interior timber surfaces.

Emergency Telephone: +49 (0) 30 192 40 (Toxic Substance Emergency Call Centre Berlin)
Refer: World Health Organization's (WHO) European Directory of Poison Centres

2. Hazards Identification

Hazard Classification:
3.1D - Substance that is a Combustible liquid.
6.1E - Substance that may be harmful if swallowed and enters airways.
6.3B - Substance that may cause mild skin irritation.

Hazard statement codes:
H227 Combustible liquid.
H304 May be harmful if swallowed and enters airways.
H316 Causes mild skin irritation.

Precautionary statement codes - prevention:
P101 If medical advice is needed, have product container or label at hand.
P102 Keep out of the reach of children.
P103 Read label before use.
P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P280 Wear protective gloves/protective clothing/eye protection/face protection.

Precautionary statement codes - Response
P314 Get medical advice/attention if you feel unwell.
P332 + P313 If skin irritation occurs: Get medical advice/attention.
P370+P378 In case of fire: Use foam, carbon dioxide or dry chemical.

Precautionary statement codes - Storage:
P403+P235 Store in a well-ventilated place. Keep cool.

Precautionary statement codes - Disposal:
P501 Disposal of this substance must be in accordance with the Hazardous Substances

(Disposal) Regulations 2001 with reference to all local council regulations. This may also include any method of disposal that must be avoided.

3. Composition / Information On Ingredients

Potentially Hazardous Ingredients	% by weight (approx)	TLV (TWA) mg/m3	TLV (TWA) ppm	STEL (TWA) mg/m3	STEL (TWA) ppm	Cas No.
Alkanes	45-55	1200	171			90622-58-5
Zirconium Drier	0.1-1	100				94581-21-2
Zinc Drier	0.1-1	100				84418-50-8
Manganese Drier	0.1-1	100				37449-19-7
Acticide CF Preservative	0.1-1	100				26530-20-1

4. First Aid Measures

Inhalation Move the victim to fresh air immediately. Begin artificial respiration if breathing has stopped.

Skin Contact If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water.

Eye Contact Hold eyelids and flush the eye continuously with running water. Continue flushing for at least 15minutes. Get medical assistance. if irritation persists.

Ingestion If swallowed, do not induce vomiting. Give a glass of water if person is conscious. Begin artificial respiration if the victim is not breathing. Use mouth to nose rather than mouth to mouth. Obtain medical attention.

Health Hazard Information: Treat according to symptoms. Gastric lavage may be indicated if ingested. Do not wait for symptoms to develop. Measures should be taken to control acidosis and maintain urine output.

5. Fire Fighting Measures

Extinguishing Media to be used:
Dry Chemical
Alcohol Foam

Special Fire Fighting Procedures
Use water to keep fire exposed containers cool. Do not use a heavy water stream, in order to avoid the fire to extend. If a leak or spill has not ignited, use water spray to disperse the vapours and to protect personnel attempting to stop leak. Prevent extinguishing media from escaping to drains and waterways.

Unusual Fire and Explosion Hazards
Vapour density heavier than air. This product is combustible.

6. Accidental Release Measures

Spill and Leak Procedure
Eliminate every possible source of ignition. Avoid breathing vapour and contact with skin, eyes and clothing. Wear recommended personal protective equipment.
Shut off leaks if without risks.
If Material Is Released Or Spilled: Absorb on fire retardant treated sawdust, diatomaceous earth, etc.
Prevent entry of product into public water, sewers, or soil.

Shovel up and dispose of at appropriate waste disposal facility in accordance with current applicable laws and regulations, and product characteristics at time of disposal.

7. Handling & Storage

Handling
Avoid prolonged repeated skin contact. Avoid contact with eyes. Wear safety glasses. Avoid inhalation of vapours or mists.
Use in well ventilated area away from all ignition sources. Take special care to avoid static electric discharge. Keep container closed.

Storage
Store in a cool area. Do not pressurise, cut, heat or weld containers- residual vapours are flammable.
This product is combustible and will fuel a fire in progress.

8. Exposure Control / Personal Protection

Recommended Personal Protective Equipment to be worn during use of product:
Protective Overalls
Synthetic Apron
Safety Glasses
Splash Goggles
Dust & Vapour Respirator
Gloves
Boots

9. Physical And Chemical Properties

Appearance and Odour
Low viscosity liquid in various colours with a solvent odour
Density 0.800
Boiling Range,°C 195 - 203
Viscosity N/A
Flash Point° 65
Evaporation Rate (BuAc=100) NE
Vapour Pressure,mm Hg at 20° 0.069
Vapour Density (Air=1) >1.0
VOC's 65g/L
Solubility in Water Negligible
Melting Point/Freezing Point,°C NA
Aromatics, % NE
Aniline Point, °C (Mixed)
Colour Various
Refractive Index, @ 20° NE
Residue On Evaporation, mg/100ml NE
pH NA
Flammability Limit, %vol

Lower (LEL)	Upper (UEL)	Auto Ignition Temperature, °C
0.7	5.4	365

NA = Not Applicable, NE = Not Established,
NR = Not Regulated Against D = Decomposes

10. Stability And Reactivity

Reactivity Data
Stable at room temperature and pressure.
Avoid sources of heat and ignition, open flames.

Hazardous Decomposition By products
Carbon dioxide and carbon monoxide.

Hazardous Polymerisation
Will Not Occur

11. Toxicological Information

Ingestion
Small amounts of liquid aspirated into the lungs during ingestion, or from vomiting, may cause chemical pneumonitis, or pulmonary oedema. Ingesting large amounts of this product will result in headaches, nausea, dizziness and tracheal burning.

Skin Contact
This product is mildly irritating to the skin with prolonged exposure. It may result in dryness and cracking of the skin.

Inhalation
Vapour concentrations above recommended exposure levels are irritating to the nose and throat. The inhalation of this product in large quantities will yield moderate discomfort. Over exposure may be evident through symptoms of dizziness, nausea, headaches and other central nervous system effects.

Eye Contact
This product may be mildly irritating to the eyes, but will not permanently damage the eye tissue.

Mutagenic Effects None
Reproductive Effects None
Chronic Effects No chronic health data is available for this product.

12. Ecological Information

Not identified as being harmful to aquatic life.

13. Disposal Considerations

This product can degrade rapidly in air. Expected to be removed in wastewater treatment. Based upon data for similar components or estimated data, this product is expected to be biodegradable according to OECD guidelines.

14. Transport Information

Land Transport ADR/RID
UN No: Not regulated
HAZCHEM: Class 3.1D
Technical name: Paint

Marine Transport IMDG/GGV
UN No: Not regulated
HAZCHEM: Class 3.1D
Proper shipping name: Paint

Air Transport ICA/IATA
UN No: Not regulated
HAZCHEM: Class 3.1D
Proper shipping name: Paint

15. Regulatory Information

This product is not classified as dangerous goods.

16. Other Information

IF PRINTED THIS MSDS SHEET IS UNCONTROLLED.

Access Pacific Ltd urges each customer or recipient of this MSDS to study it carefully to become aware of the hazards associated with the product.

The reader should consider consulting reference works or individuals who are experts in ventilation, toxicology, and fire prevention, as necessary or appropriate to use and understand the data contained in this MSDS. To promote safe handling, each customer or recipient should:

(1) notify its employees, agents, contractors and others whom it knows or believes will use this material or the information in this MSDS and any other information regarding hazards of safety;
(2) furnish this same information to each of its customers for the product; and
(3) request its customers to notify their employees, customers, and other users of the product of this information.

NOTE: The information and recommendations contained in this data sheet have been compiled from sources believed to be reliable and represent the best current opinion on the subject. No warranty, guarantee or representation is made by the company as to the absolute correctness or sufficiency of any representation contained in this data sheet and the company assumes no responsibility in connection therewith. Nor can it be assumed that all acceptable safety measures are contained in this data sheet or that other additional measures may not be required under particular or exceptional circumstances or conditions.

28 April 2016

Hardie & Thompson Ltd
1062 Colombo Street
Edgware
Christchurch
Via email: shane@hardie-thomson.co.nz

To Whom It May Concern

RE: Compatibility of Fireshield 1FR over FOREVERBREATHE™ plant oil based stain.

We can confirm that the Protega laboratory in Sweden reviewed the supplied FOREVERBREATHE™ stain and carried out adhesion tests, including attempting to ignite the product once coated with Fireshield 1FR system.

FOREVERBREATHE™ stain did not have any adverse effects or adhesion issues when used with the Fireshield 1FR system.

If applied in accordance with our application instructions by an approved applicator, timber coated with FOREVERBREATHE™ plant oil based stain, and the Fireshield 1FR system, will achieve a Group 1-S surface finish for compliance purposes.

Please do not hesitate to call or email if you have any questions.

Sincerely,

Matthew Hughes
Business Development Manager
matthew@fireshield.co.nz

Sustainable management of **privately owned** native forests

New Zealand's native forests provide economic, environmental, cultural and recreational value. In New Zealand there are 6.4 million hectares of native forest, 5.2 million hectares of which are protected as conservation land; this accounts for 24 percent of total land area.

The remaining 1.2 million hectares are in private ownership and approximately a third of this is suitable for harvest.

Landowners have the opportunity to sustainably harvest a portion of their resource under the Forests Act 1949. The purpose of the Forests Act is to promote the sustainable forest management of New Zealand's privately owned native forests. This is achieved through managing the harvesting, processing and export of indigenous timber on a sustainable long-term basis. The Act also controls the manner in which harvesting occurs particularly with regard to the specific character of the forest concerned, for example, the topography, riparian areas and areas of special biological significance.

The Ministry for Primary Industries (MPI) is responsible for administering the Forests Act including setting harvest levels and implementing a comprehensive monitoring and auditing regime to ensure harvest levels are sustainable.

Commonly harvested species include red beech, silver beech, rimu, matai and totara.

MPI ensures harvest levels are sustainable

Under the Forests Act, harvesting must occur either under an approved sustainable forest management plan or a limited use permit.

Plans can only be approved if they consist of a comprehensive forest inventory and describe the management processes and ecological safeguards that must be followed to maintain the health of the forest into the future.

Harvest limits are set at a level that ensures the volume of timber removed is always less than annual growth rates across the forest. If natural regeneration, following harvesting, is insufficient MPI can require seedlings to be planted at the harvest site.

Before harvesting can take place, operators must also provide MPI with an annual logging plan. This provides information on the area the trees shall come from, approved harvest volumes (by species), proposed harvest methods, location of tracks, and any requirements for specific actions, for example, directional felling to protect any adjacent forest. Operators are also encouraged to actively harvest trees with different ages and sizes and to source trees that are at risk of dying naturally.

Auditing and monitoring harvest levels

MPI audits the harvesting, milling and export of native timber. Sawmills processing native timber must be registered with MPI, and operators are required to provide regular production records.

This ensures that New Zealand has a robust, workable regulatory system which supplies assurances to consumers around legality of source and underlying principles of sustainability.

In addition, over 60 percent of the native timber produced in New Zealand has secured international recognition and certification by the Forest Stewardship Council.

MPI ensures harvesting has minimal environmental impact

Forestry, like all human activity, has some degree of impact on the natural environment. However, plans and permits are only approved by MPI if the forest's natural values are maintained. Natural values include maintenance of forest flora and fauna, soil and water quality, and the control of pests and weeds.

MPI monitors these activities closely to encourage best management practices and to ensure impacts are kept to an acceptable level.

All harvest activity is also regulated under the Resource Management Act through regional and district plans.

Did you know:

- Forests act as a carbon sink continuing to store carbon long after a tree is harvested. Every cubic metre of native timber harvested removes almost a tonne of CO_2 emissions from the atmosphere.
- The total volume of native timber harvested annually over all species in New Zealand will take around 50 days to replace through natural regeneration.
- Habitat trees containing hollows for use by forest fauna are set aside during harvesting to provide important habitats for birds and insects.
- Stumps, roots and heads of trees are left to decay in the forest after harvesting. This breakdown of organic matter helps to return important nutrients to the system.
- Selected harvesting of native trees can create canopy gaps which provide young trees and seedlings with space and sunlight to help them grow.

This leaflet provides a high-level overview of the New Zealand indigenous forestry management regime. To find out more about how New Zealand's forests are managed to enable sustainable forestry for future generations, go to: **http://www.mpi.govt.nz/forestry/forestry-in-nz/indigenous-forestry.aspx**

December 2013

Forestry Philosophy

Ensuring Sustainability

New Zealand is extremely fortunate to have in place rigorous and detailed legislation governing the management and utilization of natural resources.

In the Forests Act, sustainable forest management is described as:

"The management of an area of indigenous forest land in a way that maintains the ability of the forest growing on that land to continue to provide a full range of products and amenities in perpetuity while retaining the forest's natural values"

Part II, section 5 of the Resource Management Act 1991 defines “sustainable management” as:

“managing the use, development and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic and cultural well-being and for their health and safety while- sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonable foreseeable needs of future generations, and safe-guarding the life supporting capacity of air, water, soil and ecosystems and avoiding, remedying, or mitigating any adverse effects of activities on the environment.”

Our forest management systems incorporate lessons learned from over 50 years of experience and research. The system follows a philosophy of productive protection and accounts for conservation and environmental values by recognizing the importance of:
- wildlife protection
- plant protection
- water protection
- historic site protection
- landscape protection
- recreational protection

Our sustainable management system involves carefully selecting and harvesting small variable groups of trees of similar size and occurrence to natural forest replacement patterns. Annual harvest rates are such that every year the volume of harvested trees is less than the volume grown naturally.
Our operations are monitored and audited by Ministry of Forestry officials and are in compliance with Part IIIa of the Forests Act and our field staff regularly consult with the Department of Conservation for updates on conservation research.

Independent 3rd Party Certification.
Currently NZSFP does not support the 3rd party certification of its forest management systems as the attainment of such certification is prohibitive to the scale of the business. Instead we contend that the heavily regulated system we operate under guarantees legality and ensures producers are at least meeting definitions of sustainability as outlined under the Forests Act and The Resource Management Act.

Foreverbeech forest resource was documented by the United Nations Food and Agriculture Organization as one of the twenty examples of exemplary forest management in the Asia Pacific region. http://www.fao.org/docrep/007/ae542e/ae542e00.htm

Applied Sustainability

About the Author:

Helmut Janssen M.Sc. (Forest Ecology); B.Sc. (Resource Management);
Helmut Janssen is an environmental scientist, experienced in policy advice on soil quality and biodiversity and its implementation; specializing in resource information and integrated management of useful natural resources via ecological reforestation of native forests. He founded and co-directs Adaptive Resource Management Ltd - www.bushvitality.org.nz and the charity Reciprocate Biocapacity - www.lifecapacity.org
He is the author of “Bush Vitality Assessment” and representative of Tanes Tree Trust.

Recently he attended field trip to view modern beech forest silvicultural regimes in practice and here interviews NZSFP forester Jon Dronfield...

Question. Are you advocating clearing our remaining forests?
Not at all! Our natural forest ecosystems are unique and our ecological forestry retains permanent forest-cover and supports indigenous re-forestation initiatives elsewhere.
Historic forest clearances and pests have put indigenous biodiversity at risk throughout NZ.
Ecological forestry however, can reverse biodiversity decline, enhance the resilience of remaining forests and its resource value to the community. We recognize that beech forests are very robust and productive ecosystems. We are able to harvest small volumes of timber from private forests, (often previously modified) and over time improve the quality of timber and ecosystem health.

Question. What comes to mind when I ask you to tell me what Sustainability is?
Before anything else, sustainability has always been about maintaining the organizational integrity of the environment. On a broad scale it’s how we as a species recognize our consumption is a burgeoning debt on the planet, while also realizing that we can’t get off. How, when we project population growth forward 25, 50, 200 years and the corresponding energy and raw materials demands, we can find logical solutions to live in balance. In a nut shell societies must find a way to produce what they require while protecting and strengthening the life supporting capacities of all ecosystems.

Question. What then is Applied Sustainability?
Quite simply it’s DOING what needs to be done to sustain environment and people. To do this well one needs to understand how indigenous forests evolve and survive in the face of natural and man-made disturbance., the needs of people and how people must apply themselves to enhance ecosystem productivity and maintain environmental and cultural resilience.

Question. What does your ecological forestry look like in practice?
The simple message of ecological forestry is: what stays behind is more important than what is removed.
This is the difference between managing forests long-term and unsustainable clear-felling. There are many examples around of high-graded forest, where the best trees have been removed to suit economic objectives. Our challenge is to go beyond this rather short-sighted approach.
Ecological forestry replicates small scale natural disturbance patterns from natural death or wind-throw to establish an uneven-aged stand structure with high productive and biodiversity values. We target our harvest at sites to recover dying trees and then build on gaps to promote regeneration while retaining cavity bearing trees and standing dead snags, to preserve the forest's naturalness, productivity and diversity. We thin tight cohorts of younger trees before intense competition has to detrimental an effect on trees with best vitality. I like to call it "swimming with the current", because remember our goal is to retain a highly productive and functioning ecosystem, the existence of which is the basis for any yield in the first place, so why would you ever exploit and degrade that productivity?
There are many examples around the world of this approach leading to healthy forest ecosystems and improving timber quality and value.
In the past Germany's foresters, like their NZ colleagues, implemented plantation strategies for incompatible trees (spruce, pines, eucalypts) with disastrous results for soils and long-term ecosystem productivity. Today ecological forestry strengthens forest structures and sustains multiple species and values. Forests are managed as continuous-cover stands and are thriving. So yes you can certainly manage and plan for increasing timber quality and yields by working alongside indigenous forests' ecological processes.

Question. How do you then align demand and supply?
Well, both need to develop together and have been out of synch for some time.
The local market is in a weakened state and we use more specialty timber than we produce. We import vulnerable hardwoods from Africa and threatened hardwoods from Indonesia.
This understood, it is crucial that we recognize and market the true value of our natural timber resources. Where wood was discarded, or chipped in the past, due to tree damage and rot, today we make best use of the resource (for example as veneer). We need to retain the capacity and skills to add value to our timber products and maintain a demand as a price-taking commodity - in other words an appreciative market needs to grow in synch with our productive capacity and pay the true costs of developing sustainable production methods.

Question. Is there a need to inform potential customers to acknowledge the true costs and buy into accepting a uniquely sustainable native forest product?
Exactly, I talk about "informed consumerism", and I mean we have to empower the consumers with information so they can make ethical choices. So often choices are price driven, but there's a growing number of buyers who demand sustainability. In other words, people who care as much about the source of the product as we care in producing it. Secondly, we have to re-educate consumers that natural products contain features and character that define and describe the past history of the tree and forest, in essence they reflect the wild beauty of New Zealand. This is why we refer to 'natures perfect imperfection'

11 May 2010

CONFIRMATION OF SUSTAINABLE FOREST MANAGEMENT PLAN PURSUANT TO PART 3A FORESTS ACT 1949, NEW ZEALAND

At the date of this letter, the forest listed below is subject to a registered Sustainable Forest Management (SFM) Plan, approved by the Ministry of Agriculture and Forestry (MAF), pursuant to Part 3A, Forests Act 1949.

Trees harvested in compliance with this registered SFM Plan and associated Annual Logging Plans approved by MAF, meet the requirements of the Forests Act 1949 regarding the sustainable management of indigenous forests.

Explanatory notes on sustainable forest management are on page 2.	
SFM Plan/ No:	4 / 09 /0055
Forest Owner / Landholder:	New Zealand Sustainable Forest Products Limited
Date of Approval:	20/02 /2001
Date of Expiry	19/02/2101
Location:	Rappahannock Valley, Maruia
Forest Area:	355 hectares
Species Under Management:	Red Beech, Silver Beech
Approved Annual Harvest	Red Beech - 859 m^3 (standing volume) Silver Beech - 227 m^3 (standing volume)

Yours faithfully

Robert Miller

Robert Miller
Manager, Operations

Ministry of Agriculture and Forestry
Te Manatū Ahuwhenua, Ngāherehere
MAF Policy – Sustainable Programmes

Pastoral House, 25 The Terrace, PO Box 2526, WELLINGTON 6140, New Zealand
Telephone: 64-4-894 0100, Facsimile: 64-4-894 0300, Web: www.maf.govt.nz

Sustainable Forest Management (SFM)

The Forests Act 1949 provides for the sustainable forest management of privately owned indigenous forests in New Zealand through the issuing of SFM Plans and Permits. Sustainable forest management means the management of indigenous forest land in a way that maintains the ability of the forest growing on the land to continue to provide a full range of products and amenities in perpetuity while retaining the forest's natural values.

SFM Plans

SFM Plans generally have a 50 year duration and provide for the long term management of the forest. They are registered on the land title and bind the forest owner or land holder. In addition to requiring harvests of timber from the forest to be sustainable, SFM Plans require replacement of harvested species, either through natural regeneration or planting, protection of the forest from fire, pests and weeds and maintenance of natural and amenity values, including flora and fauna.

SFM Permits

SFM Permits are of a shorter duration (10 years), and provide for a capped maximum harvest of 250 cubic metres in total of timber from kauri, or podocarp or shade tolerant or exposure sensitive broadleaved hardwood species, and 500 cubic metres of beech or light demanding hardwood species. Where these quantities are more than ten percent of the timber of each species on the forest subject to the SFM Permit, the harvest is limited to ten percent in each case. Like SFM Plans, Permits require replacement of harvested species (either through natural regeneration or planting), protection of the forest and maintenance of natural and amenity values. SFM Permits must also be registered on the land title.

Annual Logging Plans

Harvesting under a SFM Plan or Permit must be undertaken in accordance with approved Annual Logging Plans.These require coverage of such matters as:

- Selection and marking of trees to be harvested
- Approval of harvesting areas
- Approval of harvesting methods
- Requirements for protecting water ways or other special logging requirements
- Location of roads and landings

Auditing and Compliance

MAF carries out periodic forest inspections and auditing of Annual Logging Plans for compliance purposes. MAF forestry officers have powers of entry and log seizure under the Forest Act. Penalties of up to $200,000 may be applied by the Courts for some of the offences under the Act.