



Formica® HPL is a postformable high pressure decorative laminate. Internal or external curves can be formed down to a recommended minimum radius of 10mm for solid colours, while patterns and woodgrains can be formed to a radius of 6mm in the machine direction. Benchtops, breakfast bars, special shapes and other products can be manufactured by independent fabricators to individual specifications.

APPLICATIONS

Formica® HPL can be used in a variety of applications. These include: counters, bench and table tops, store fixtures, office furniture, vanity units, display work, reception areas, wall panelling, toilet partitions, and door and drawer fronts.

It is also suitable for medical, dental and food preparation areas.

Tolerances comply with Australian/ New Zealand Standard AS/NZS 2924.1:1998



LIMITATIONS

Do not use externally or in areas where prolonged exposure to temperatures exceeding 135° may occur.

Must be supported by recommended substrate over entire surface area. Do not bond directly to plaster, concrete walls or gypsum plasterboard.

FIRE PERFORMANCE PROPERTIES

The Group Number Classification below was generated from tests carried out and data recorded in accordance with the test procedure described in ISO 5660 2002 – Reaction to Fire test – Part 1: Heat Release & Part 2: Smoke Production Rate, for the purposes of determination of the Group Classification in accordance with the New Zealand Building Code Verification Method C/VM2 Appendix A

Formica High Pressure Laminate bonded to Lakepine MDF substrate

Group Number Classification: 3

Please note: Indicative testing has indicated a change in substrate to Lakepine MRZero or Superfine particleboard (Standard or MR) will not alter the Group Number Classification.

Composition

Formica® HPL consists of several base layers of phenolic resin-impregnated kraft paper. A layer of melamine-impregnated paper in a solid colour or printed design is applied to the decorative side of the base. Printed designs are covered with a transparent overlay containing melamine. The layers are bonded under heat and pressure. The back of the laminate is sanded to permit good bonding.

SPECIFICATION

AS/NZS 2924.1:1998, Type HGP: High Pressure decorative laminates - sheets made from thermosetting resins.

Finish

Average gloss level using a Gardner 60° meter of 11 for velour finish.

Thickness Tolerance

A variation of no more than ±0.10mm.

Appearance

Minimal defects permissible when inspected in accordance with Australian /New Zealand Standard AS/NZS 2924.1:1998

Resistance to Surface Wear

Average wear resistance of not less than 350 taber cycles. Initial wear point not less than 150 taber cycles.

Product Characteristics	
Sheet Sizes	3600 x 1500mm
	3600 x 750mm
	1800 x 1500mm
	1800 x 750mm
Thickness	0.7mm (nominal)
Weight	0.9kg/m ²
Finish	Velour, Honed, Riverwash, Etchings

WHEN SPECIFYING

Materials shall be Formica® HPL as manufactured by Laminex New Zealand. Colours and/or patterns shall be..... in.... finish.

SUBSTRATES

Formica HPL should be bonded to a suitable substrate such as standard or moisture resistant particleboard, standard or moisture resistant medium density fibreboard (MDF) or marine grade plywood. A smooth surface is important. Rougher substrates such as large chip reconstituted wood panels may result in a visually unacceptable finish.



Resistance to Immersion in Boiling Water:

No more than 19% increase in weight and 21% increase in thickness for 0.7mm laminates. No more than a moderate change in gloss and/or colour.

Resistance to dry heat

No more than a slight change in gloss and/or colour after 20 minutes in contact with a container holding glycerol tristearate at 180°C for velour finish.

Resistance to Scratching:

Resists a force of 2 Newtons when scratched with a diamond stylus. Gloss has a scratch resistance of no less than 0.5 Newtons.

Dimensional Stability:

After exposure to controlled high and low humidity conditions, a dimensional change of no more than: 0.75% with the grain and 1.25% across the grain.

Resistance to Impact:

No visible damage when subjected to an impact of 20N from a 5mm steel ball mounted at one end of a spring-loaded bolt.

Resistance to Staining:

No staining by 34 specified reagents. Moderate staining by 15 additional specified reagents is permitted, but a mild abrasive creme cleanser (not recommended on glossy finish) should easily remove the stains. Highly abrasive cleaners are not recommended for stain removal.

Resistance to Colour Change in Artificial Light:

No more than a slight colour change in Xenon arc light (minimum 6 on Blue Wool Scale).

Formica® HPL complies with the colour fastness requirements of the Australian/ New Zealand Standard AS/NZS 2924.1:1998. It has good colour retention under normal conditions of internal use.

Prolonged exposure to sunlight may cause some change in colour. For this reason, Formica® HPL is not recommended for external use.

Resistance to Cigarette Burns:

No more than a moderate change in gloss and/or moderate brown staining.

Formability:

Will satisfactorily postform after reaching 163°C without cracking, blistering or delaminating. Special conditions apply.

Resistance to Blistering:

After the sample temperature has reached 163°C at the specified heat up rate, a minimum time of 15 seconds should elapse before blistering occurs.

Resistance to Steam:

No more than a moderate change of gloss and/or colour.

DESIGN AND SPECIFICATION NOTES

Formica® HPL can be formed by specialist fabricators to a recommended minimum internal or external radius of 10mm in the machine direction. Postforming in the cross direction will not be warranted unless prior approval is given by the Laminex New Zealand Technical Manager.

Formica patterns and woodgrains can be formed to a 6mm radius in the machine direction.

Any requirements for smaller radii will be negotiated between specifier and fabricator, and will not be covered by the Formica warranty from Laminex New Zealand .

FORMING

Postforming (P/F) Laminate bonded with suitable adhesive to pre-shaped core.

Area to be formed must reach 163°C before forming.

This temperature can be controlled and monitored by the use of “tempilaq” (heat sensitive liquid).

Apply tempilaq on the area to be heated. Allow heat up time to lapse.

- Tempilaq must melt across the entire area to ensure tight forming.
- Heat up time is required before forming.

Any cracking along the top or bottom of the postformed edge is a clear indication of insufficient heat either on top or along the bottom of the bend.

Tempilaq will indicate the area affected by insufficient heat. Adjust the heat accordingly.

Settings for best post forming will vary from machine to machine. It is the fabricator's responsibility to optimise settings using the guidelines supplied.

Postforming

1. Factors affecting changes in heat up time:
 - a. Pattern
 - b. Colour
 - c. Sheet thickness
 - d. Room temperature
 - e. Board temperature
 - f. Relative humidity
 - g. Draughts from doorways or other openings
2. Main factors contributing to cracks when postforming are:
 - a. Rough substrate profile preparation
 - b. Wrong heat up rate
 - c. Insufficient heat
 - d. Very cold substrate and laminate
 - e. Uneven heat distribution
 - f. Element too far from laminate
 - g. Heating element too cold
3. Main factors contributing to blistering when postforming are:
 - a. Heating the laminate for too long
 - b. Uneven heat distribution
 - c. Warped material
 - d. Heating element too hot
4. Main factors contributing to delamination when postforming are:
 - a. Insufficient heat
 - b. Insufficient glue
 - c. Insufficient pressure

Remember

- Temperature must be uniform along the postformed length and across the depth



of the laminate to be postformed. Uniform heat spread over the depth of laminate to be postformed becomes more critical as the depth of laminate increases.

- Too much tension can cause “tension cracks” as the laminate cools.
- Insufficient heat and pressure will leave a gap between laminate and substrate, creating a hollow area which is susceptible to cracking on impact.
- Use a hand roller to press down along bend to ensure proper adhesion to substrate.
- Condition laminate and substrate together for at least 48 hours prior to fabrication. Ideal environment is 24°C and 45% relative humidity.

Cooktops

When using Formica® HPL as a splashback, please refer to the manufacturer’s installation recommendations for cooktops around combustible materials.

DESIGN CAPABILITIES

Formica® HPL can have a 180° rounded edge. It has a heat resistant surface up to 135°C.

PRODUCT DATA

Storage

Sheets should be stored flat and face-to-face to reduce the possibility of damage. Bulk stocks should be stored flat on supports and covered to protect from dust.

Handling

To avoid scratching or marking the surface, work areas should be kept clean. Contact with any abrasive surface should be avoided. Sheets should be lifted carefully and care should be taken not to slide them on the decorative surface.

Cutting

Formica® HPL should always be cut with the working face up to minimise surface chipping.

Hand Sawing

A sharp panel saw gives good results due to its small teeth. The cutting stroke should be held at approximately 45° to the sheet and the back stroke should be light.

Machine Sawing

Bench-type circular saws, with a pitch of 6mm to 8.5mm and only a slight set, provide a clean cut of the decorative surface. Metal band saws are ideal for cutting shapes.

Planing

An excellent edge finish can be achieved with a hand plane.

Hand Planing

Specially hardened plane irons, such as “Titan”, require less sharpening than standard iron plane knives.

Machine Planing

Vertical spindle moulding machines with tungsten-tipped cutters are ideal for edge finishing and for making mitres.

Drilling

Hand or power operated high-speed twist drills will cut clean holes. Due to the hard melamine surface, a small pilot hole should be drilled for carpenter’s bits. Fast cut types give the best results. For large holes 20mm diameter and over, a centre bit should be used.

Bending

Forming is accomplished by applying heat to the laminate in the area of the bend. Once it has reached the required temperature, the sheet is formed with the aid of a mandrel. The sheet is allowed to cool and bond whilst held in the desired shape.

Due to the high degree of control needed to bend Formica® HPL, this work is usually carried out in the workshop by an experienced fabricator using special postforming equipment.

Bonding

Ensure that the surface to which the Formica® HPL is to be bonded is clean, dust-free and without irregularities.

Formica® HPL can be bonded with several types of adhesive; the choice depends on the particular application. Refer to the adhesive manufacturer for details of particular adhesive types.

All adhesive on the decorative surface should be removed immediately.

Joining

Waterproof mastic should be used to prevent the ingress of water into the substrate or glue line at butt joints. Corner joining methods include: Full Mitre, Mason’s Mitre and Aluminium joining strip. Full mitre is the only means of joining a cove top or specially shaped components.

Each of these joining methods can be pre-cut by the fabricator for assembly on site.

The use of Radiused corners in cutouts is the recommended way of reducing stress by distributing it over a wider area rather than directing it to a 90° corner. It is important to smooth the edges of the radius cutout with a fine tooth file as this will further reduce any stress in the construction. Over-cutting inside corners should be avoided as this may increase the risk of stress cracks.

Formica® Foundations™ is a decorative postforming, continuous pressed laminate. Internal or external curves can be formed down to a recommended minimum radius of 7mm. Benchtops, breakfast bars, special shapes and other products can be manufactured by independent fabricators to individual specifications.

APPLICATIONS

Formica® Foundations™ can be used in a variety of applications. These include: counters, bench and table tops, store fixtures, office furniture, vanity units, display work, reception areas, wall panelling, toilet partitions, and door and drawer fronts. It is also suitable for medical, dental and food preparation areas.

Product Characteristics

Sheet Sizes	3600 x 1400mm
Thickness	0.5mm (nominal)
Mass	0.7kg/m ²
Finish	Crystal

WHEN SPECIFYING

Materials shall be Formica® Foundations™ as manufactured by Laminex New Zealand. Colours and/or patterns shall be..... in..... finish.

SUBSTRATES

Formica® Foundations™ should be bonded to a suitable substrate such as high moisture-resistant and standard particleboard, high moisture-resistant and marine grade ply or medium density fibreboard. A smooth surface is important.

LIMITATIONS

Do not use externally or in areas where prolonged exposure to temperatures exceeding 130° may occur.

Must be supported by recommended substrate over entire surface area. Do not bond directly to plaster, concrete walls or gypsum wallboard.



PROPERTIES

Composition

Formica® Foundations™ consists of layers of phenolic resin-impregnated kraft paper. A layer of melamine-impregnated paper in a solid colour or printed design is applied to the decorative side of the base. Printed designs are covered with a transparent overlay containing melamine. The layers are bonded under heat and pressure. The back of the laminate is sanded to permit good bonding.

Finish

Average gloss level using a Gardner 60° meter of 10 for crystal finish.

Thickness Tolerance

A variation of no more than ±0.10mm.

Resistance to Surface Wear

Average wear resistance of not less than 300 taber cycles. Initial wear point not less than 120 taber cycles.

Resistance to dry heat

No more than a slight change in gloss and/or colour after 20 minutes in contact with a container holding glycerol tristearate at 130°C for crystal finish.

Resistance to Scratching:

Resists a force of 2 Newtons when scratched with a diamond stylus. Gloss has a scratch resistance of no less than 0.4 Newtons.

Resistance to Impact:

No visible damage when subjected to an impact of 20N from a 5mm steel ball mounted at one end of a spring-loaded bolt.

Resistance to Colour Change in Artificial Light:

No more than a slight colour change in Xenon arc light (minimum 6 on Blue Wool Scale).

Prolonged exposure to sunlight may cause some change in colour. For this reason, Formica® Foundations™ are not recommended for external use.

Resistance to Cigarette Burns:

No more than a moderate change in gloss and/or moderate brown staining.

Formability:

Will satisfactorily postform without cracking, blistering or delaminating. Special conditions apply.



180fx[®]

Formica[®] 180fx[®]

Formica[®] 180fx[®] offers inspiration on a grand scale. Achieving an unprecedented large scale design, this high pressure laminate uses innovative printing technology that captures every nuance and detail.

Formica 180fx is available in a Matt finish and also in GlossPlus finish. GlossPlus is a high gloss laminate with mark and scuff resistance superior to traditional laminates. Formica 180fx may be readily heat formed down to a radius of 8mm in the machine direction (MD), using special equipment without loss of durability or appearance.

APPLICATIONS

Formica 180fx can be used for countertops, bench tops, vanity units, bars, store fixtures and other applications where good appearance, resistance to marking and scuffing, and resistance to stain and heat from ordinary sources is required.



SCUFF RESISTANCE – DIAMONDGLOSS

Product Characteristics	
Size	3595 x 1395mm
Thickness	0.7mm (nominal) (± 0.1mm)
Weight	1.0kg/m ² approx.
Finish	High Gloss, Matt
Colours and Pattern Range	Refer to current Formica 180fx brochure

Fire Hazard Indices		
(Typically achieved when tested to AS/NZS 1530.3)*		
Indices	Result	Range
Ignitability	8	0-20
Spread of Flame	9	0-10
Heat Evolved	4	0-10
Smoke Developed	5	0-10

*Laminate tested free standing

Cone Calorimeter AS/NZS 3837*

Classification	Result
Group Number [#]	1
Average Heat Release Rate	49.0kw/m ²
Average Specific Extinction Area ^{##}	64.2m ² /kg

*Refer to Specification C1.10a section 3(c) of the Building Code of Australia
 **Refer to Specification A2.4 of the Building Code of Australia
 *Laminate tested free standing

Properties (AS/NZS 2924.1)

Property	Results
Resistance to Surface Wear	Initial wear not less than 150 cycles. Average wear not less than 350 cycles
Resistance to Immersion in Boiling Water	No more than a marked change of gloss and/or colour. Gain on weight of not more than 19%
Resistance to Dry Heat at 180°C	No more than a moderate change of gloss and/or colour

Resistance to Steam	Marked change of gloss and/or colour
Dimensional Stability	Dimensional change of not more than 0.7% with grain and 1.2% across grain
Resistance to Staining	Reagents Groups 1 and 2 = No visible change. Reagents Groups 3 and 4 = No more than a moderate change of gloss and/or colour
Resistance to Colour Change in Artificial Light*	Not more than slight colour change in Xenon arc light Minimum 6 on Blue Wool Scale
Resistance to Cigarette Burns	No deterioration other than moderate change in gloss and/or moderate brown staining

*Formica 180fx laminate has good colour retention and dimensional stability in normal interior applications. However, prolonged exposure to sunlight may cause shrinkage and/or some change in colour. Formica 180fx is therefore not recommended for external applications or interior applications with prolonged exposure to direct sunlight.



PREMIUM GLOSS FINISH

Formica® GlossPlus™ and AR+® Finish

Formica GlossPlus is a high gloss laminate with mark and scuff resistance superior to traditional laminates. It may be readily heat formed down to a radius of 8mm in the machine direction (MD), using special equipment without loss of durability or appearance.

APPLICATIONS*

Formica GlossPlus is widely used for countertops, bench tops, vanity units, bars, store fixtures and other applications where good appearance, resistance to marking and scuffing, and resistance to stain and heat from ordinary sources is required.

Formica GlossPlus and AR+ finish HPL can also be used for whiteboards provided instructions contained in the Formica Care & Maintenance Guide are followed.



Product Characteristics	
Sizes	3595 x 1395mm
Thickness	0.7mm (nominal) (-0.1+ 0.1mm)
Weight	1.0kg/m ² approx.
Finish	High Gloss
Colours and Pattern Range	Refer to current product availability chart

FIRE PERFORMANCE

The Group Number Classifications are generated from tests carried out and data recorded in accordance with the test procedure described in ISO 5660 2002 – Reaction to Fire test – Part 1: Heat Release & Part 2: Smoke Production Rate, for the purposes of determination of the Group Classification in accordance with the New Zealand Building Code Verification Method C/VM2 Appendix A

While full testing has not been completed on these products at this point in time, indicative testing of gloss laminates has indicated that the Group Number Classification for Formica GlossPlus or AR+ is most likely to be 3

Please contact Laminex NZ to confirm if a full test report is available.

Properties (AS/NZS 2924.1)

Property	Typical Values
Resistance to Surface Wear	Initial wear not less than 150 cycles. Average wear not less than 350 cycles
Resistance to Immersion in Boiling Water	No more than a marked change of gloss and/or colour. Gain on weight of not more than 19%
Resistance to Dry Heat at 180°C	No more than a moderate change of gloss and/or colour
Resistance to Steam	Marked change of gloss and/or colour
Dimensional Stability	Dimensional change of not more than 0.7% with grain and 1.2% across grain

Resistance to Colour Change in Artificial Light*	Not more than slight colour change in Xenon arc light Minimum 6 on Blue Wool Scale
Resistance to Cigarette Burns	No deterioration other than moderate change in gloss and/or moderate brown staining

SCUFF RESISTANCE

More than 95% gloss retention after being scrubbed with a 3M Scotch-Brite™ Heavy Duty scouring pad attached to a Sheen Model 903 Wet Abrasion Scrub Tester, using 800 gram applied weight and 30 scrubs.

WHEN SPECIFYING

Materials shall be Formica GlossPlus laminate as supplied by Laminex New Zealand. Colours and/or patterns shall be

* Formica GlossPlus laminate has good colour retention and dimensional stability in normal interior applications. However, prolonged exposure to sunlight may cause shrinkage and/or some change in colour. Formica GlossPlus laminate is therefore not recommended for external applications or interior applications with prolonged exposure to direct sunlight.



**7 Year Limited Warranty
Formica® Laminates**

1. Subject to the conditions and limitations set out in this warranty below, Fletcher Building Products Limited trading as The Laminex Group warrants to the original purchaser of any FORMICA LAMINATES Product for interior residential or interior commercial use that The Laminex Group will at its option, repair or replace any FORMICA LAMINATES Product without charge if it is defective directly as a result of its manufacture or supply by The Laminex Group or the materials used in its manufacture by The Laminex Group during the first seven years after initial purchase (proof of purchase will be required). Subject to paragraph 7, this obligation terminates at the expiration of seven years from the date of purchase of the product concerned from The Laminex Group.
2. This warranty does not cover any defect caused by:
 - a) Any act of God, any natural occurrence, or any other act or circumstance beyond The Laminex Group's control; or
 - b) Failure to follow any procedures recommended by The Laminex Group, at the time of fabrication, sale and/or installation for the installation of a FORMICA LAMINATES Product; or
 - c) Physical abuse, misuse, accidents, exposure to excessive heat, exposure to excessive moisture, the use of solvents or inappropriate cleaning products/materials, improper maintenance, normal 'wear and tear', scratches, scuffs, burns, stains, wipe marks on darker colour surfaces, exposure to chemical products; or
 - d) General fading and discolouration or damage due to direct and indirect light (exposure to sunlight should be avoided); or
 - e) The product being used in applications that are not recommended by The Laminex Group in the product literature published; or
 - f) Where the defect has been caused by faulty workmanship by any person other than The Laminex Group; or
 - g) Variation in colour, pattern, shade of material against the sample material, displays and/or printed illustrations.

This warranty also does not cover:

- h) Where the defect is trivial or insubstantial; or
- i) Where, as at the date of notification of the defect to The Laminex Group, the type or colour of the alleged defective product no longer forms part of The Laminex Group's standard stock range and the person complaining of the defect does not agree to the supply of a replacement which is as close a type or colour match as is possible from The Laminex Group's then prevailing stock range; or
- j) Anything that has been disclosed as a feature or limitation of the FORMICA LAMINATES Product in any literature published by The Laminex Group; or
- k) Outdoor application.

3. This warranty applies only to FORMICA LAMINATES Products:
 - a) Purchased from The Laminex Group after 1 July 1994 for interior residential or interior commercial use in New Zealand;
 - b) That has remained installed at the location at which it was first installed after its sale by The Laminex Group;
 - c) Which has been installed, maintained, used and protected in the manner recommended by The Laminex Group, as at the relevant time of such installation, maintenance, use or protection, in its literature published from time to time concerning the FORMICA LAMINATES Product, a copy of which may be obtained, free of charge, at the point of purchase, by visiting www.formica.co.nz or by writing directly to The Laminex Group at the address given below; and
 - d) Where The Laminex Group has been notified of the defect within seven days of the first person to become aware of it.
4. This warranty will cover reasonable labour charges which are necessary for the repair or replacement of the FORMICA LAMINATES Product covered by this warranty.
5. A replacement product may not be reasonably available from The Laminex Group in the same shape, type or colour as the original FORMICA LAMINATES Product covered by this warranty. If a replacement product of the same shape, type or colour is not reasonably available, The Laminex Group reserves the right to provide a replacement product of as close a shape, type and colour match as is reasonably possible from The Laminex Group's then prevailing product range in satisfaction of its obligations under this warranty.
6. Except as expressly provided in paragraphs 1 and 7, all terms, conditions, warranties, undertakings, inducements and representations, whether express or implied, statutory or otherwise relating in any way to FORMICA LAMINATES Product are excluded. Without limiting the generality of the preceding sentence, The Laminex Group will not be under any other liability in respect of any loss or damage (including consequential loss or damage) however caused (whether by negligence or otherwise) which may be suffered or incurred or which may arise directly or indirectly in respect of the FORMICA LAMINATES Product.
7. Where any applicable legislation implies any term, condition or warranty into the contract of sale between The Laminex Group and a person, or The Laminex Group's relationship with a person, which has acquired a FORMICA LAMINATES Product, or otherwise gives that person a particular remedy against The Laminex Group, and that legislation or any legislation voids or prohibits any provision excluding, or modifying the application of, or exercise of, any liability under such term, condition, warranty or remedy, then that term, condition, warranty or remedy shall be deemed to be included in or, as the case may be, apply to that contract or relationship. However, The Laminex Group's liability for any breach of such term, condition or warranty or under such remedy, shall be limited, at The Laminex Group's option, in any one or more of the ways permitted by that legislation including, where so permitted:
 - a) If the breach related to a FORMICA LAMINATES Product:
 - i. The replacement of the FORMICA LAMINATES Product or the supply of equivalent product;
 - ii. The repair of the FORMICA LAMINATES Product;

- iii. The payment of the cost of replacing the FORMICA LAMINATES Product or acquiring equivalent product; or
 - iv. The payment of the cost of having the FORMICA LAMINATES Product repaired; and
 - b) If the breach relates to services:
 - i The supplying of the services again; or
 - ii The payment of the cost of having the services supplied again.
- 8. The provisions of this warranty shall apply in addition to and not in substitution for The Laminex Group Conditions of Sale. Where there is any conflict between the terms of this warranty and the Conditions of Sale, unless The Laminex Group in its sole discretion determines otherwise, the Conditions of Sale (other than Condition 10.1(a)) shall prevail.
- 9. Please note that the law may confer on persons rights arising out of the supply of a FORMICA LAMINATES Product. This warranty should not therefore be read as an exhaustive statement of the rights of the original purchaser or any other person. Nothing in this warranty shall affect any rights a consumer, as defined in the Consumer Guarantees Act 1993, may have under that Act.
- 10. This warranty does not cover any other product used or installed in connection with the FORMICA LAMINATES Product.
- 11. This warranty is not transferable or assignable.
- 12. Any inquiries regarding this warranty should be sent to

FORMICA LAMINATES Warranties,
The Laminex Group
PO Box 12270
Penrose
Auckland 1642

Remember to retain your proof of purchase



Laminex[®]
New Zealand

Laminex New Zealand
1 O'Rorke Rd
Penrose
AUCKLAND 1642
Telephone: 0800 303 606
Facsimile: 0800 303 707

Date last updated: 06/09/2006

MATERIAL SAFETY DATA SHEET 107

STATEMENT OF HAZARDOUS NATURE

In its intact state, this product is classified as not hazardous according to the criteria of the National Occupational Health and Safety Commission (NOHSC). Dust from the product is hazardous according to the criteria of NOHSC.

Formica® High Pressure Laminates

IMPORTANT NOTICE: This Material Safety Data Sheet (MSDS) is issued by The Laminex Group, in accordance with NOHSC guidelines. As such, the information contained herein must not be altered, deleted or added to. The Laminex Group will issue a new MSDS when there is a change in product specifications and/or NOHSC guidelines/regulations. The Laminex Group will not accept any responsibility for any changes made to its MSDS in content by any other person or organization..

Section 1: PRODUCT IDENTIFICATION

Other Names:

Formica® laminates, Formica® Chemtop, Formica® Aquapanel, Formica® Freeform, Formica® DecoMetal, Formica® ColorCore, Formica® Interlaminates, Formica® Backing boards, Formica® Laboratory grade, Formica® Premium laminates, Formica® Access flooring, Formica® Compact laminate, Formica® Fire retardant grade, Formica® Foundations.

Appearance:

The products are manufactured as high pressure laminates, in sheet form and ranging in thickness from 0.5 mm to 30 mm. They are made from layers of resin-impregnated paper that are bonded together under heat and pressure.

Odour Threshold:

Newly manufactured and freshly cut surfaces may have a faint resin odour.

Use:

Decorative surfacing of furniture, cabinets, bench tops, walls, ceilings, floors and doors.

Section 2: COMPOSITION & INFORMATION ON INGREDIENTS

Chemical Entity	CAS No.	Proportion	Exposure Limits NOHSC [1003(1995)]
Paper	None	60-75%	TWA = 10mg/m ³
Paper – pigmented/dye	None	< 7%	TWA = 10mg/m ³
Phenol formaldehyde resin	9003-35-4	< 35%	Formaldehyde: 1.0ppm
Melamine formaldehyde resin	9003-08-1	<3%	(1.2mg/m ³) TWA: 2.0ppm (2.5 mg/m ³) short term exposure limit STEL sen – sensitiser; Cat 1 (carcinogenic to humans).
Plasticizers	None	2%	
Fire Retardant Compound	None	<2%	

Note:

- The above ingredients are bound together under heat and pressure. The process 'cures' the resin, which bonds with the other substances.

AICS Status: All components of the finished product are listed in AICS

Section 3: HAZARDS IDENTIFICATION

Note: In its intact state this product is not classified as a hazardous substance by NOHSC. Exposures to dust produced from machining the laminates or gas and vapour from heat processing may result in the following health effects.

Acute:

Swallowed: Unlikely to occur but swallowing the dust may result in abdominal discomfort.

Eye: The dust, gas and vapour may be irritating to the eyes causing discomfort and redness.

Skin: The dust, gas and vapour may irritate the skin, resulting in itching and occasionally a red rash. During handling sharp edges may cut the skin.

Inhaled: The dust, gas and vapour may irritate the nose, throat and lungs, especially in people with upper respiratory tract or chest complaints such as asthma.

Chronic: Repeated exposures over many years to uncontrolled dust, gas and vapour from these laminates may increase the risk of irreversible health effects including allergic dermatitis, asthma, chronic nose or throat irritation or lung scarring in some people. Formaldehyde has been evaluated by the International Agency for Research on Cancer (IARC) as group 1, carcinogenic to humans.

Section 4: FIRST AID

Swallowed: Give water to drink. If abdominal discomfort occurs seek medical attention.

Eye: Flush with flowing water for at least 15 minutes, and if symptoms persist seek medical attention.

Skin: Wash with mild soap and running water. Seek medical attention if symptoms persist. For cuts, clean wound and apply antiseptic dressing.

Inhaled: Leave the dusty area

Advice to Doctor: Treat symptomatically.

Section 5: FIRE FIGHTING MEASURES

Flammability:

These laminates are flammable but difficult to ignite. Fine airborne dust can ignite so avoid a build-up of dust and keep all storage and work areas well ventilated. Avoid sources of radiant heat and flame; and avoid sparks and sources of ignition in all electrical equipment, including dust extraction equipment. People must not smoke in storage or work areas.

Fire/explosion hazard:

Burning or smouldering laminates or dust can generate carbon dioxide and other pyrolysis products typical of burning organic material. Avoid breathing smoke from burning or smouldering material. Dry dusts in high concentrations can be explosive.

Fire Fighting Recommendations

Use water, fog, CO₂, foam or dry chemical fire extinguishers.

Section 6: ACCIDENTAL RELEASE MEASURES

Off-cuts and general waste material should be placed in containers and disposed of at approved landfill sites, or burnt in an approved furnace or incinerator, in accordance with disposal authority guidelines. Dust from the laminates should be cleaned up by vacuuming or wet sweeping techniques

Section 7: HANDLING & STORAGE

The laminates should be stored in well-ventilated areas away from sources of heat, flame or Sparks. No special transport requirements are considered necessary.

Section 8: EXPOSURE CONTROLS & PERSONAL PROTECTION

Summary

Keep exposure to dust as low as practicable with the aim of maintaining airborne dust levels to below 1.0 mg/m³ Time Weighted Average (TWA) measure as inspirable dust. Under factory conditions machining, sawing, drilling, routing, laser cutting and sanding must be done with equipment fitted with local exhaust ventilation devices capable of removing dust and smoke at source. Work areas should be kept clean by regular vacuuming or wet sweeping.

Exposure Standards:

The NOHSC "*Exposure Standards for Atmospheric Contaminants in the Occupational Environment*", [NOHSC: 1003 (1995)] for formaldehyde and cellulose are:

Cellulose (paper fibre):	10mg/m ³ time-weighted average (TWA)
Formaldehyde:	Formaldehyde: 1.0 ppm (1.2mg/m ³) TWA: 2.0 ppm (2.5 mg/m ³) short term exposure limit STEL sen – sensitiser; Cat 1 (carcinogenic to humans)

Keep exposures as low as practicable with the aim of maintaining respirable dust levels below 1.0 mg/cubic metre (TWA).

Engineering Controls:

All work with these laminates should be carried out in such a way as to minimise the generation of, and exposure to dust. Under factory conditions, sawing, drilling, sanding heat processing etc. should be done with equipment fitted with exhaust devices capable of removing dust, gas and vapour at source. Hand power tools should be fitted with dust bags and used in well-ventilated areas.

Work areas should be well ventilated. They should be cleaned at least daily, and dust removed by vacuum cleaning or wet sweeping method.

Personal Protection:

Skin:	Wear loose, comfortable clothing. Long-sleeved shirts and trousers are recommended to prevent skin irritation. After handling laminates, wash with mild soap and water. Do not scratch or rub the skin if it becomes irritated. Wash work clothes regularly and separately from other clothes. Comfortable lightweight leather or equivalent work gloves (AS 2161) should be worn.
Eye:	Dust resistant safety glasses or non-fogging goggles (AS/NZS 1336) should be worn when machining.
Respiratory:	A class P1 or P2 replaceable filter or disposable half face-piece particulates respirator should be worn when machining. Respirators should comply with AS/NZS 1716 and be selected, used and maintained in accordance with AS/NZS 1715.
Smoking and Other Dust:	Inhalation of airborne particles from other sources in the work environment, including those from cigarette smoke, may increase the risk of contracting the lung disease associated with exposure to dust from this product. The Laminex Group recommend that all work and storage areas be smoke free zones and other airborne contaminants be kept to a minimum.

Section 9: PHYSICAL DESCRIPTION / PROPERTIES:

Boiling Point: (oC)	Not Determined
Melting Point: (oC)	Not Determined
Vapour pressure:	Not Determined
Specific gravity (H ₂ O = 1)	1.1-1.7
Flashpoint:	Not Applicable

Flammability Limits: Not Applicable
Solubility in water: Negligible

Section 10: STABILITY & REACTIVITY

Stable at normal temperatures and pressures

Section 11: TOXICOLOGY INFORMATION

Any health hazards associated with these products have been evaluated on the basis of the individual ingredients, and these hazards should be assumed to be additive. The hazards described in this document have been evaluated based on a threshold of 1.0% for all hazardous ingredients and 0.1% for all carcinogens.

Acute Effects

The dust, which may be generated during manual or mechanical cutting, drilling, sanding or other abrading processes, and the smoke generated by heating or laser cutting, may cause temporary irritation of the eyes and upper respiratory system.

The symptoms are expected to subside after exposure has stopped and are not expected to cause any long-term effects.

Chronic Effects

The IARC evaluated formaldehyde in 19951 and concluded that: "There is *limited evidence* in humans for the carcinogenicity of formaldehyde; there is *sufficient evidence* in experimental animals for the carcinogenicity of formaldehyde; and that overall formaldehyde is *probably carcinogenic to humans (Group 2A)*". The IARC again evaluated formaldehyde in June 20042 and concluded that: "*there are adequate data available from humans for an increased risk of nasopharyngeal cancer*" and that formaldehyde should now be classified as Group 1, carcinogenic to humans.

Whilst this wood panel product contains less than 0.01% free formaldehyde, people using the product may be exposed to low concentrations of formaldehyde if the boards are heated (as in laminating), are cut by laser cutting machines, and/or if dust particles come in contact with the moist mucous membranes lining the upper respiratory tract. Extensive literature searches and research carried out by independent occupational and environmental health specialists has not indicated any risks over and above those associated with wood dust without binder. This research includes the 1999 formaldehyde risk assessment carried out by US scientists in collaboration with the US EPA and Health Canada. The risk assessment concludes that if a non-smoking worker were exposed to 0.004 ppm of formaldehyde continuously for 80 years and also to 0.1 ppm for 40 years at work then the predicted additional risk of respiratory tract cancer would be 4.1 per 1,000,000,000. The controls needed for minimising the potential for formaldehyde exposure from this product will be the same as those for control of dust exposures. These risk assessments and conclusions are in no way altered by the reclassification of formaldehyde to Group 1 by the IARC.

References:

- 1 IARC *Monographs on the Evaluation of Carcinogenic Risks to Humans*. Volume 62: Wood dust and formaldehyde. IARC, Lyon, France. 1995.
- 2 IARC Press Release No. 153, 15 June 2004. IARC, Lyon, France.

Section 12: ECOLOGICAL INFORMATION

This product should be used only for its designated purposes

Section 13: DISPOSAL

This product is not regulated as a hazardous waste by Australian environmental authorities. Local authority guidelines should be followed in the disposal of waste products and dust.

Section 14: TRANSPORT INFORMATION

This product is not regulated as a dangerous good. No special transport requirements are necessary.

Section 15: REGULATORY INFORMATION

The Laminex Group has assessed this product in accordance with the criteria of the National Occupational Health and Safety Commission: NOHSC: 1008 (1999) and NOHSC: 10005(1999), and the assessment is that occupational exposure to dust, smoke or fume from this product is hazardous according to the criteria of the NOHSC. No special State or Commonwealth regulations apply. The product is not listed in the Standard for the Uniform Scheduling of Drugs and Poisons.

Formaldehyde - is listed in the 1999 NOHSC list of Designated Hazardous Substances: NOHSC: 10005(1999) if present in concentrations of 0.2% or more (this wood panel product contains <0.01% formaldehyde).

Section 16: OTHER INFORMATION

Contact Point: Technical Manager – Laminate Products
Laminex New Zealand
1 O'Rorke Rd
Penrose, Auckland 1642
Telephone: 0800 303 606
Facsimile: 0800 303 707

Whilst the information contained in this document is based on data which, to the best of our knowledge, was accurate and reliable at the time of preparation, no responsibility can be accepted by us for errors and omissions. The provision of this information should not be construed as a recommendation to use any of our products in violation of any patent rights or in breach of any statute or regulation. Users are advised to make their own determination as to the suitability of this information in relation to their particular purposes and specific circumstances. Since the information contained in this document may be applied under conditions beyond our control, no responsibility can be accepted by us for any loss or damage caused by any person acting or refraining from action as a result of this information.

Formica® Magnetic Laminates

Formica® Magnetic Laminates are high pressure laminates with a decorative face and an embedded metal foil layer that ensures magnetic objects will hold strongly to the laminate surface.

This feature provides a unique product that delivers a large scale magnetic surface. Depending on the surface finish applied, it can also provide a surface that can be written on and easily cleaned to serve a variety of vertical wall and panel installations.

APPLICATIONS

Formica Magnetic Laminates are ideal for a range of vertical surfacing options where magnetic surfaces are required, writeable and cleanable surfaces are sought, or a combination of both.

Specific applications based on the surface finishes are:

- Glossy White - whiteboards, meeting room writeable walls, classroom walls for displaying drawings, pictures and/or writing on the wall, residential applications for writeable splashbacks, such as laundries.
- Matt Black - blackboards and chalkboards, teaching environments, children's



bedroom wall surfaces or feature panels, kitchen door panel surfaces or splashbacks (except behind cooktop zones) where lists and notes can be kept.

Notes:

- Only recommended writing materials and cleaning procedures should be used (see Care and Maintenance section of this document).
- Formica Magnetic Laminates are only suitable for vertical applications. They are not recommended for **heavy usage** applications, such as worktops, bars and tables.

Warning:

Due to the embedded metal foil that ensures a magnetic capability, fabricating of the laminates will most likely create sparks. Please take necessary safety precautions as set out within the Fabrication Guidelines section of this document. Due to the metallic inclusion all electrical fittings/attached appliances need to meet electrical industry earthing standards.

PRODUCT CHARACTERISTICS

Size:	2440 x 1220mm, 3050 x 1220mm
Nominal thickness:	1.0mm
Weight:	2.8kg/m ² approx.

PROPERTIES

(Typical physical properties when tested to AS/NZS 2924.1 – VGS grade)		
Property	Result	Unit
Resistance to surface wear	>550	Revolutions
Resistance to impact (small ball)	>35	N
Resistance to scratching	>1.5	N
Resistance to staining	No effect	Visual appraisal (Groups 1–4)
Resistance to colour change - Glossy White - Matt Black	Very slight effect No effect	Grey scale Grey scale
Dimensional stability at elevated temperature:	0.08 0.12	% (longitudinal direction) % (transverse direction)
(Typical physical properties when tested to EN 717-1):		
Formaldehyde Emissions	0.02	mg/m ³
(Typical emissions when tested to ASTM D5116):		
VOC Emissions	0.024*	mg/m ² /hr

*Conforms to NZ Green Building Council Green Star Office Interiors 2009 IEQ-3 limit of <0.5mg/m³/hr.

FIRE PERFORMANCE

The Group Number Classifications are generated from tests carried out and data recorded in accordance with the test procedure described in ISO 5660 2002 - Reaction to Fire test - Part 1: Heat Release & Part 2: Smoke Production Rate, for the purpose of determination of the Group Classification in accordance with the New Zealand Building Code Verification Method C/VM2 Appendix A.

Group Number Classification - 3

WHEN SPECIFYING

“Vertical surfacing shall be Formica Magnetic Laminates as supplied by Laminex New Zealand. Colour/ Finish shall be

CARE AND MAINTENANCE

Formica Magnetic Laminates can be cleaned with non-abrasive or non-harsh alkaline cleaning agents. Do not use abrasive scourers and cleaners, even those in liquid form, as these may permanently reduce the stain resistance of the surface. These laminates should only be cleaned using a soft, moist cloth or moist chamois and then dried with a soft dry cloth.

Before the first use, peel off the protective plastic film and clean the surface to remove any adhesive residue.

Glossy finish: is suitable for marking with whiteboard markers (not permanent markers). Once dry, these markings can be wiped off using a soft dryboard eraser or soft cloth, such as a microfibre cloth.

(There is no guarantee that Formica Magnetic Laminates can always be cleaned so that they are completely free of residue or markings, because the use and quality of marker pen is beyond our control. Please check the recommendations by the manufacturers of the marker pen before use.)

Matt finish: is suitable for use with marking chalk or liquid chalks. Use a soft dry board eraser or soft cloth to wipe dry board. Due to the matt nature of the surface it cannot always be wiped completely clean in the dry condition. For complete cleaning use a soft moist cloth.

STORAGE

Formica Magnetic Laminates must be stored in an area closed off from external conditions, kept dry at room temperature and with a relative humidity around 50–60%. Sheets must be stored horizontally and well supported with evenly spaced supports, at a distance of at least 200mm from the floor. Protect the stored sheets from:

- moisture or water
- exposure to direct sunlight
- hot air currents
- direct exposure to heat, e.g. light bulbs or other heat sources.

The surface temperature of the laminate sheet should not exceed 70°C.

FABRICATION GUIDELINES

Formica Magnetic Laminates should be bonded to high quality substrates using cross linked PVA or contact adhesive. If using the Glossy finish laminate take care to keep the glue line as smooth as possible to minimise any ‘telegraphing’ of uneven underlying surfaces through to the gloss surface. When using hot glues or adhesives the temperature should not exceed 60°C (140°F). When pressing the laminate to a substrate, a thin protective soft layer (e.g. paper) should be placed on top of the decorative surface to protect it from damage.

Avoid excess glue coming into contact with the unprotected laminate surface. Use only sufficient pressure to ensure a good bond.

Formica Magnetic Laminates can be sawn, milled and drilled using good quality sharp carbide-tipped tools. Circular saws with a trapezoidal saw tooth pattern are suitable and the following guidelines are recommended:

- minimum speed of 5,000rpm
- feed rate of 4–5 metres/minute
- avoid break out of the reverse side by using a pre-scorer blade to score the underside and avoid metal splinters and burrs
- When such scoring equipment is not available, a smooth fibreboard should be laid underneath the laminate during the cutting process.

Warning:

Fabricating this laminate material may create sparks. Please take care by using appropriate personal protective equipment, especially protective glasses or goggles. Please ensure that processing takes place with the disconnection of any dust extraction or exhaust system to avoid sparks entering these systems.

During cutting and machining a slight burring may occur on the new edge (Please take care and use personal protective equipment when handling cut sheets to avoid any chance of personal injury from sharp or burred edges.). This can be removed by careful use of a fine metal file. Take care not to get any metal burrs on the surface of the laminate sheet and do not drag or slide sheets or boards over the laminate surface, so that any surface damage can be avoided.

JOINTING

Where more than one panel is required the individual pre-fabricated panels will need to be installed over existing linings or direct to timber or steel framing with an expressed joint between. Jointing options include; negative detail, chamfered butt edge, aluminium jointers, and timber mouldings. Proprietary jointing systems such as GIB ReadyLock may also be considered.