PLYMAN

Prestige Panels (PVC)

Technical Data Sheet
Version 1.0
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Overview

Plyman Prestige Panels feature a PVC (Polyvinyl) decorative film bonded to an E0 medium density fibreboard (MDF) core. This results in a pre-finished double-sided panel. The surface mimics the look and feel of wood veneer.

To ensure precision and longevity, these panels require careful handling and machining to preserve their integrity. All cutting and machining tools should be kept sharp and regularly maintained.
For cleaning—especially after edge banding—wipe along the grain direction rather than across it.

Composition

Plyman Prestige Panels are constructed using an E0 MDF core, offering a durable and stable substrate for the decorative PVC overlay. The surface features advanced embossing technology, resulting in a textured, three-dimensional finish that enhances both appearance and feel.

Applications

- Interior vertical applications
- Cabinetry for kitchens, bathrooms, and laundries
- Furniture for both residential and commercial spaces
- Dry area wall panels and linings

Specifications

Product Characteristics

Attribute	Details
Decor Options	Classic Oak
Finish Options	Prestige Face 2 Sides (F2S)
Sheet Dimensions	2440 x 1220 mm, 2745 x 1220 mm, 3050 x 1220 mm, 3660 x 1220 mm
Nominal Thickness	3mm, 4mm, 6mm, 9mm, 12mm, 16mm, 18mm

Attribute	Details
Core Material	Customwood E0 MDF (*Moisture-Resistant MDF available upon request*)

Matching Edgetape

Edgetape Type	Size
PVC (Unglued)	22 x 1 mm
PVC (Unglued)	45 x 1 mm

Design Considerations

To ensure durability and a refined finish, all exposed edges should be sealed with PVC edgetape.
Darker finishes may highlight surface marks and scratches more prominently than lighter colours

Substrate Properties (Customwood E0 MDF)

Plyman Prestige Panels use MDF that aligns with JIS A 5905 Standards.

Property	Unit	3mm	4mm	6mm	9mm	12mm	16mm	18mm
Density	kg/m^3	790	790	790	700-750	700-750	700-750	700-750
Moisture Content	%	7±2	7±2	7±2	7±2	7±2	7±2	7±2
Internal Bond Strength	MPa	0.65	0.65	0.65	0.65	0.65	0.65	0.65
Modulus of Rupture (MOR)	MPa	35	35	35	35	35	35	35
Modulus of Elasticity (MOE)	MPa	3000	3000	3000	3000	3000	3000	3000
Surface Soundness	MPa	0.8	0.8	0.8	0.8	0.8	0.8	0.8
Face Screw Holding	N	N/A	N/A	N/A	N/A	1000	1000	1000
Edge Screw Holding	N	N/A	N/A	N/A	N/A	800	800	800
Thickness Swell (24 hours)	%	15	15	15	15	15	15	15
Formaldehyde Emission	mg/L	≤0.5	≤0.5	≤0.5	≤0.5	≤0.5	≤0.5	≤0.5
Internal Bond After Wet Cyclic Test	MPa	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Thickness Swell After Wet Cyclic Test	%	10	10	10	10	10	10	10
Wet Bending Strength	MPa	15	15	15	15	15	15	15
Thickness Tolerance	mm	±0.2	±0.2	±0.2	±0.2	±0.2	±0.2	±0.2
Squareness (Max diagonal difference)	mm/m	≤2	≤2	≤2	≤2	≤2	≤2	≤2
Water Absorption	%	10	10	10	10	10	10	10
Linear Expansion (Humidity Changes)	%	0.3	0.3	0.3	0.3	0.3	0.3	0.3

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Dimensions and Tolerances

Tolerance Type	Specification
Thickness Options	3mm, 4mm, 6mm, 9mm, 12mm, 16mm, 18mm
Weight per m² *(Based on density: 790 kg/m³ for ≤6mm, 700-750 kg/m³ for ≥9mm)*	**3mm:** 2.37 kg (790 kg/m³) **4mm:** 3.16 kg (790 kg/m³) **6mm:** 4.74 kg (790 kg/m³) **9mm:** 6.30 - 6.75 kg (700-750 kg/m³) **12mm:** 8.40 - 9.00 kg (700-750 kg/m³) **16mm:** 11.20 - 12.00 kg (700-750 kg/m³) **18mm:** 12.60 - 13.50 kg (700-750 kg/m³)
Length & Width Tolerance	±2.00 mm
Thickness Tolerance	+0.35 mm / -0 mm
Squareness (Max diagonal deviation)	≤2 mm per metre
Edge Straightness	1.50 mm per metre

Limitations

- For interior use only; not suitable for exterior applications.
- Should not be installed in high-moisture or wet environments, like saunas and showers.
- The MDF core must always remain dry to prevent damage.
- Not intended for heavily used surfaces such as countertops, high-traffic retail counters, pub tops, or dining tables.
- Always adhere to Health and Safety guidelines detailed in this document.

Handling and Storage

- Handle with care to protect the decorative surface from damage.
- Avoid dragging or sliding panels over rough surfaces, or even over another PVC panel; always lift when moving panels.
- Store in a cool, dry, and well-ventilated area, away from moisture, heat, and direct sunlight.
- Stack flat on level bearers that span the full width of the panel with any overhang of equal measure at both ends.

Machining Recommendations

General Guidelines

For clean and precise cuts, avoid excessive speeds when machining. For optimal results, consult your tooling supplier to ensure the correct blade type, RPM, and feed rate for your specific setup.

Optimised Cutting Guidelines

For clean, precise cuts on Plyman Prestige Panels (PVC over MDF), a scribing blade or hollow-ground blade saw delivers the best finish straight from the cut, reducing the need for additional edge finishing.

For smaller-scale projects, alternative cutting methods include:

- A fine-toothed panel saw with a hand planer for accurate trimming.
- A well-sharpened bench saw paired with a router for smooth, controlled cuts.

Best Cutting Practices

- Cut slightly oversized and refine edges with planing or sanding to achieve final dimensions.
- When using a hand saw, maintain a low cutting angle, provide adequate panel support, and avoid excessive force to prevent chipping.
- To minimise edge damage, consider applying masking tape along the cut line before cutting.

For optimal results, use carbide-tipped triple-chip grind (TCG) blades, maintain consistent RPM and feed rates, and follow recommended saw blade settings.

Cutting Specifications

Saw Diameter (mm)	Saw RPM	Teeth Count	Rim Speed (m/s)	Max Feed Rate (m/min)
250	4600	80	47	43
300	3800	96	56	52
350	3300	108	66	58
400	2900	120	75	65

Fastening & Pilot Hole Guidelines

Recommended Screws

Use screws specifically designed for MDF or particle board, such as Twinfast screws or an equivalent option. Drilling a pilot hole slightly deeper than the intended screw depth helps prevent overtightening. Applying a small amount of adhesive to the screw thread can improve grip and holding strength.

Face Fastening

To maintain surface integrity and prevent lifting, ensure that screws do not penetrate beyond two-thirds of the panel's total thickness.

Pilot Hole Size Guide for MDF:

Screw Gauge	Recommended Pilot Hole Diameter (mm)
3	1.0
4	2.0
5	2.4
6	2.6
7	2.7
8	3.0
9	3.3
10	3.5

CNC Machining Guidelines

Panel Cutting

Cutter Type	Optimal Speed (RPM)	Maximum Feed Rate (m/min)	Suggested Tool
12 mm Spiral Cutter	18,000	2.0	Two-flute upcut finishing spiral cutter or equivalent
4 mm Spiral Cutter	18,000	1.0	Two-flute upcut finishing spiral cutter or equivalent

Panel Boring

Tool Type	Operating Speed (RPM)	Maximum Feed Rate (m/min)
20 mm Forstner Bit	4,000	1.3
8 mm Brad Point	4,000	1.0
5 mm Brad Point	4,000	1.5

Note: Always verify the ideal feed rate with your tooling supplier.

Chip Load Considerations

Chip load refers to the amount of material removed per cutting edge pass and is calculated as:

Chip Load = Feed Rate (mm/min) ÷ (RPM × Number of Flutes)

Under standard conditions, a chip load of approximately 0.4233 mm can be expected. However, adjustments may be necessary depending on material thickness or cutter geometry. Consult your tooling supplier for the most suitable settings.

Setup and Cutting Best Practices

- Ensure that scribing cutter tips extend below the panel's lower surface to prevent chipping.
- For a high-quality finish, use an "onion skin" cutting method—cut panels 0.5 mm oversized on all sides while leaving 0.3 mm of the lower veneer intact, then perform a second trimming cut to achieve precise dimensions and a smooth, chip-free edge.
- For small components such as drawer backs or cabinet rails, use temporary tabs (0.3 mm thick, 15–20 mm long) to hold them in place during cutting. These tabs can be easily removed and lightly sanded once cutting is complete.

Edge Finishing

To ensure longevity and a refined look, all panel edges should be properly finished using PVC edgetape.

Available Edgetape Sizes

- **PVC:** 22 x 1 mm and 45 x 1 mm (unglued)

Application

- Use a dedicated edge banding machine for best results.
- Adjust scrapers for textured surfaces or disable them if necessary.
- Conduct a test run before full production.

Maintenance & Cleaning

Items to Avoid (Damage the Panel)

- **Abrasive Cleaners** (cream cleansers, scouring powders, metal polishes) → Contain gritty particles that can scratch and wear down the surface.
- **Strong Solvents** (paint thinners, harsh degreasers, oven cleaners, bleach-based solutions) → Can discolour, soften, or degrade the finish.
- **Abrasive Tools** (steel wool, scrubbing pads, sanding materials) → Will scratch and damage the surface texture.

Recommended Alternatives (Safe for the Panel)

- **Warm soapy water** → Gentle, effective for general cleaning.
- **Microfibre cloths** → Soft, removes dust and fingerprints without scratching.
- **Diluted vinegar solution** → Mild, non-abrasive, safe for light stain removal.
- **pH-neutral surface cleaners** → No harsh chemicals, suitable for laminated/MDF surfaces.
- **Isopropyl alcohol (70%)** → Safe for grease removal, evaporates quickly, non-abrasive.

Health & Safety

To ensure a safe working environment when handling wood panel products, follow these key guidelines:

- Ensure proper ventilation in storage areas that hold Plyman Prestige Panels.
- Dispose of sawdust, shavings, and offcuts responsibly to reduce airborne particles and comply with environmental waste disposal guidelines.
- Maintain a clean and well-ventilated workspace when cutting, sanding, or machining panels. Use dust extraction systems that comply with local health and safety regulations. If an extraction system is unavailable, wear a dust mask that meets AS/NZS 1715 & AS/NZS 1337 standards.
- Exposure to wood dust and formaldehyde can irritate the skin, eyes, and respiratory system, potentially leading to sensitisation, which increases the risk of asthma and dermatitis.
- Long-term inhalation of wood dust is associated with an increased risk of nasal cancer, as it is classified as a known carcinogen. Formaldehyde has also been identified by the International Agency for Research on Cancer (IARC) as a cancer-causing substance.
- Seal all exposed panel surfaces in occupied areas to enhance durability and minimise potential health risks.

Sustainability

Plyman Prestige Panels are manufactured in New Zealand using FSC-certified MDF, supporting responsible forestry and sustainable production.

Contact Information

Plyman Prestige Panels are proudly supplied by **Plywood R Us**, trading as **Plyman and Timberman**, a division of **The Botica Group**.

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