IBS Plywood Guide

September 2025

IBS
SUSTAINABLE BUILDING PRODUCTS

BUILDING BETTER HOMES

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IBS
SUSTAINABLE BUILDING PRODUCTS

Welcome to Independent Building Supplies (IBS), your trusted partner in the New Zealand building industry. Since our inception in 1993, IBS has been dedicated to sourcing and providing the highest quality building materials from around the globe. As a family business with four generations active in the building industry in New Zealand, we bring a wealth of experience and a deep commitment to excellence.

One of the key aspects that set IBS apart is our commitment to innovation. We are constantly on the lookout for new and improved building materials that can enhance the efficiency and effectiveness of construction projects. Our team of experts works closely with suppliers to bring cutting-edge products to the New Zealand market, ensuring that our customers have access to the latest advancements in building technology.

But our commitment to excellence doesn't stop at our products. At IBS, we pride ourselves on providing unparalleled customer service. Our knowledgeable and friendly team is always on hand to offer expert advice and support, helping you choose the right materials for your project.

ABOUT IBS

At IBS, we recognise that the foundation of any great building project lies in the quality of the materials used. That's why we meticulously select our suppliers, ensuring that every product meets our stringent standards for durability, performance, and sustainability. Our extensive range of offerings includes everything from plywood and panels to flooring and cladding, all tailored to meet the diverse needs of the New Zealand market.

OUR PRODUCT RANGE

We seek to develop the most innovative, professional and profitable experience for our clients. Our passion is for providing our customers with the best products, the best service, and the best experience

In addition to our exceptional product range and customer service, IBS is also dedicated to sustainability. We recognise the importance of protecting our environment and are committed to sourcing eco-friendly building materials. Our sustainable product offerings help reduce the environmental impact of construction projects, allowing our customers to build responsibly without compromising on quality or performance.

IBS is more than just a supplier of building materials; we are a partner in your success. Our comprehensive range of services includes everything from product sourcing and logistics to technical support and training. We work closely with our customers to understand their unique needs and provide tailored solutions that help them achieve their objectives.

Join the countless builders, contractors, and homeowners who trust IBS for their building material needs. Discover the difference that quality, innovation, and exceptional service can make in your next project. Choose Independent Building Supplies – your partner in building excellence for over 30 years.

- **IBS RigidRAP®**
- **IBS RigidRAP®- XT**
- **IBS EUROFloor**
- **IBS EUROLine**
- **IBS FIBRE® Range**
- **IBS Structural Ply**
- **IBS Builders Grade® Ply**
- **IBS Formply**
- **IBS Decorative Ply**
- **IBS PanelLine®**
- **IBS Showerline**
- **IBS Softboard**
- **IBS Hardboard**
- **IBS Peg Board**
- **IBS Acoustic Panels**
- **IBS Mini Panels**

IBS Team

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Scan the QR codes to view all relevant documents.

Contact us or order a sample

If you're interested in any of our products or have any questions, contact our team to find out more or order a sample.

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Contents

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1. What is IBS Plywood?

Product Description

Plywood is a remarkable material that has revolutionised the construction and furniture industries. But what exactly is plywood? In simple terms, plywood is an engineered wood made from thin layers, or “plies,” of wood veneer. These layers are glued together with the grain of each layer running perpendicular to the one before it. This cross-graining technique provides plywood with incredible strength and stability.

The process of making plywood begins with selecting high-quality logs, which are peeled into thin sheets of veneer using a rotary lathe. The veneers are then dried to remove moisture and glued together under high pressure and heat. The result is a strong, durable, and versatile panel suitable for a variety of applications. A popular choice among customers is IBS Builders Grade Ply.

Targeted for applications that don’t require load-bearing capacity or strict compliance with the New Zealand Building Code (NZBC).

It is ideal for various uses, including:

- Wall hoardings and shelving
- Sand pits
- Building dog houses or children’s playhouses
- Temporary weatherproofing for damaged buildings
- Landscaping fencing
- Formwork for paths and driveways
- Motorway sidings
- Making furniture or toys
- Wall or ceiling lining

Overall, IBS Builders Grade offers a cost-effective solution for a range of projects where high structural standards are not required.

Plywood's intended uses are vast and varied in construction, it is commonly used for flooring, walls, and roofing due to its strength and resistance to warping. In the furniture industry, plywood is prized for its ability to be shaped and moulded, making it ideal for creating stylish and modern pieces. Additionally, plywood is used in the manufacturing of cabinets, doors, and even musical instruments.

It is valued for its uniformity of performance, easy workability and sustainability. Structural plywood can meet the New Zealand Building Code AS/NZS2269. Where it is exposed to moisture, such as for an exterior cladding, structural plywood must be treated to a minimum timber treatment hazard class of H3 to ensure the Building Code's durability requirements are achieved.

In summary, plywood is a versatile and reliable material that offers numerous benefits for both construction and design. Its strength, durability, and adaptability make it an excellent choice for a wide range of projects. Whether you're building a house or crafting a piece of furniture, plywood is the perfect solution to meet your needs.

Product Range

IBS sources plywood products from the best producers from all around the world. A focus on quality as well as making sure that it comes from a fully sustainable resource is important to us. Our team have visited each and every facility on many occasions and have been working for many years to ensure the highest level of quality across our range.

	Page	Tested Bracing	Soffit & Eaves	Wall Lining	Ceiling Lining	Substrate	Flooring	Other / Cabinetry	IBS Three Green Tick	pass™
Plywood										
CD Structural Ply	31	✦	✦	✦	✦	✦	✦	✦	✦	✦
Builders Grade® Ply	31			✦	✦			✦	✦	
PlyFloor	32	✦				✦	✦		✦	✦
V-Groove Ply	32		✦	✦	✦			✦	✦	
Birch Face Poplar Core Ply	33			✦	✦			✦		
UV Coated Birch Face Ply	33			✦	✦			✦		
Builders Grade Poplar Core Ply	34			✦	✦			✦		
Okoume Face Poplar Core Hardwood Ply	34			✦	✦			✦		
Non Structural Formply	35			✦	✦			✦		
Formply F11 & F17	35							✦		

Structural plywood uses

Structural plywood is used in a wide array of applications including flooring, structural bracing and roofing substrates. It is valued for its uniformity of performance, easy workability and sustainability.Structural plywood can meet the New Zealand Building Code's not less than 50-year durability requirement for dry protected applications and can typically be untreated. Where it is exposed to moisture, such as for an exterior cladding, structural plywood must be treated to a minimum timber treatment hazard class of H3 to ensure the Building Code's durability requirements are achieved.

2. How is Plywood made

Raw Materials of Plywood

- Wood Veneers
- Glue
- In NZ approx. 60% of Plywood is chemically Treated

The Components

- Outer layers are known respectively as the FACE and the BACK
- Centre layer is known as the CORE
- Plywood with five or more plies, the intermediate layers are known as the CROSS BANDS
- Plywood may be made from hardwoods, softwoods, or a combination of the two
- Some sheets may have a thin layer of plastic, metal, or resin-impregnated paper or fabric bonded to either the face and/or back. (Formply)

The Process

In the Forest

- Planted, grown and managed to plywood specifications to maximise volume and good veneers
- Pruned regularly
- Logs are cut in the forest and quickly transported to the mill

The Log Merchandiser

All Logs go to a Log Merchandiser. They are scanned and selected for Plywood, Timber or Pulp. Parts of logs can be selected for different uses to get the maximum yield.

Here they are cut ready for:

- Timber
- Plywood veneers
- Pulp

The Prep and Peel

- Logs are debarked.
- Heated and soaked to soften wood. Steamed or immersed in hot water. For 12 to 40 hours depending on type of wood.
- As the lathe rotates the log rapidly about its long axis, a full-length knife blade peels a continuous sheet of veneer from the surface of the spinning block at a rate of 90-240 m/min.
- Different thickness veneers are peeled for various thickness of Ply.

Drying and Sorting

- The veneer is cut with a twisting blade like a plane blade into usable widths, usually about 1.4m, for making standard 1.2m wide plywood sheets.
- Optical scanners sort the veneers into “similar” moisture content groups for drying and to check for unacceptable defects.
- The sorted sections are fed into a dryer to reduce their moisture content and allow them to shrink before they are glued together.
- Once dried the veneer is graded and stacked.

Composing Line

- Under width sections have additional veneer spliced on with tape or glue to make pieces suitable for use in the interior layers where appearance and strength are less important. This is called Composing.
- Those sections of veneer that will be installed crossways the core in three-ply sheets, or the cross bands in five-ply.

Glue it Together (The Lay up)

- Veneers are assembled for various thicknesses of plywood and run through a glue spreader.
- The timing between the gluing and the Cold Press and on to the Hot Press is vital.
- The Sheets are then taken to an initial Cold Press where they are all pressed together in a pack to “set off” the glue.

The Daylight Press

- The sheets are then loaded into a Daylight press where they are compressed under a pressure of about 110-200 psi (7.6-13.8 bar), while at the same time heating them to a temperature of about 109.9-157.2 ° C.
- The pressure assures good contact between the layers of veneer, and the heat causes the glue to cure properly for maximum strength. After a period of 2-7 minutes, the press is opened, and the sheets are unloaded.
- The temperature and time is dependent on the thickness of the ply.

Cool Down QC and Repair

- Sheets are then left 24 hours to cool down.
- The rough sheets then pass through a set of saws, which trim them to their final width and length.
- Sheets then pass through scanners which do an initial sort into grades and sheets for repairs.
- Sheets then pass through either a manual repair line or in modern facilities a Robot Repair line.

Sand it and Calibrate

- Sheets are then calibrated to thickness through a set of wide belt sanders, which sand both the face and back
- Modern facilities will then ultrasound test for defects in the manufacturing process
- They are then visually graded
- Stamped on the back with appropriate markings
- Approx Moisture Content from factory should be 12-14%

Added Value Products

Extra work is then done to various sheets to add value such as:

- Cladding – Bandsawn and Grooved
- The Bandsawn finish is done to help stop surface checking when exposed to the elements for products such as cladding
- V-Groove
- Treatment
- Formply

Plywood Classification and grading

- AS/NZS 2269:2004 Plywood Structural
- AS/NZS 2271:2004 Plywood and Blockboard for Exterior use
- Plywood is graded by visual as in how it looks, and by structural testing
- Standards are to provide minimum performance requirements and specifications in the manufacture and application of plywood
- Not all plywood meets these standards but not all plywood is required to depending on the end use

3. The Faces of IBS

IBS Plywood faces

The grades from the standard

- **CpD** - Coated face grade with a smooth, durable finish, suitable for visible surfaces; minor imperfections may be present, but overall quality is maintained for aesthetic applications.
- **D** - Non-appearance grade with permitted open imperfections. Open patches are allowed and may also be a bit rough in sanding.
- **C** - Non-appearance grade with a solid face. Patches and filler are allowed and may also be a bit rough in sanding, but normally quite smooth.
- **An** - High-quality appearance grade with a distinct grooved finish, suitable for clear or quality paint finishes; minor imperfections may be present.
- **A** - High quality appearance grade, suitable for clear finishing.
- **A, S, B, C, D, CPD**
- Face and Back veneer grades

CpD **D** **C** **(An Grade)** **A**

Glue Bond

Structural plywood utilises a Phenolic Formaldehyde Type A exterior grade adhesive, which forms a permanent bond between each veneer once cured. This high-performance adhesive is specifically designed to withstand varying environmental conditions, ensuring the durability and stability of the plywood in both indoor and outdoor applications. The use of this adhesive not only enhances the structural integrity of the plywood but also contributes to its resistance to moisture and temperature fluctuations.

All IBS plywood products achieve an 'E0' emission rating, indicating formaldehyde emissions of less than 0.3 mg/l. This rating represents the lowest emission class available, making IBS plywood an environmentally friendly choice for builders and homeowners concerned about indoor air quality. The low emission levels are particularly important in residential and commercial projects where occupant health is a priority.

Furthermore, the use of Phenolic Formaldehyde adhesive allows for better performance compared to other adhesive types, as it provides excellent water resistance and longevity. This ensures that IBS plywood maintains its strength and aesthetic appeal over time, even in challenging conditions. By combining advanced adhesive technology with stringent emission standards, IBS plywood delivers a reliable, safe, and sustainable solution for a wide range of construction applications.

Glue Types

Glue

There are three main glue types for Plywood.

- **Phenolic Glue**
  - Also known as Phenol-formaldehyde resin and WBP (water boil proof) glue. This can be boiled in water for up to 72 hours and still hold together. A - Bond
- **MR Glue**
  - MR stands for "Moisture resistant". MR plywood can be in cold water for a period of time but will eventually delaminate. If in boiling water, it will fall apart within 30mins.
- **Interior glue**
  - PVA not water proof.

CpD face

The IBS Non-Structural Face Plywood panels provide numerous advantages, including Super E0 low formaldehyde emissions and a WBP A-Bond glue line. They are engineered for precise thickness calibration, strength, stiffness, and stability. Additionally, these panels are made from sustainably sourced Radiata Pine from PEFC-certified plantations, ensuring an environmentally friendly product. The Non-Structural product category includes a wide range of grades, from appearance to lower end packaging grade.

☑ Typical Applications are:

- Cabinetry
- Furniture making
- Shelving
- Interior wall panelling
- Decorative features
- Packaging materials
- Millwork and trim
- Ceiling treatments
- Doors and drawer fronts

Face grade crieteria:

- **Sanding:** Sanding quality, 150 Grit for face grade and 100 Grit for back grade.
- **Appearance:** Appearance defects that do not affect the panel's soundness are allowed, such as discoloration, fungi stains, roughness, chipping and others in no more than 5% of the panel's surface.
- **Tight Knots:** An unlimited number of tight knots are allowed up to 40mm wide.
- **Cracks and Splits:** Unrepaired cracks and splits are allowed up to 1mm wide.
- **Loose Knots and Knotholes:** An unlimited number of loose knots and knotholes repaired with polyurethane are allowed, up to 25mm wide.
- **Wood-Based Putty Repairs:** Cracks and splits repaired with wood-based putty are allowed up to 2mm wide, as well as repaired loose knotholes up to 15 x 15mm.
- Unlimited number of boat type patches.
- **Synthetic Repairs:** Cracks and splits repaired with polyurethane up to 25mm and router type synthetic repairs up to 60mm wide are allowed. The direction of the repairs does not need to be parallel.
- **Press Defects:** 2 press defects are allowed no larger than 15 x 15mm

D face

The D Face category retains key benefits, including Super E0 low formaldehyde emissions and a WBP A-Bond glue line. These panels are designed with precise thickness calibration and demonstrate strength, stiffness, and stability characteristics.

D Grade plywood is a **structural grade** designed for applications where strength and durability are required aesthetics are not a priority. It is manufactured to meet the requirements of AS/NZS 2269.0:2012 for structural plywood. The D Face product range offers various grades suitable for a wide range of applications.

☑ Typical Applications are:

- Bracing
- Roofing
- Wall hoardings
- Sand pits
- Shelving
- Building the dog house or kids playhouses
- Landscaping fencing
- Motorway sidings
- Temporary weatherproofing for damaged buildings

Face grade crieteria:

- **Sanding:** Sanding quality, 120 Grit.
- **Appearance:** Appearance defects that do not affect the panel's soundness are allowed, such as discoloration, fungi stains, roughness, chipping and others.
- **Tight Knots:** Tight and loose knots up to 65mm wide are allowed in unlimited number, and up to 3 no wider than 85mm.
- **Cracks and Splits:** An unlimited number of unrepaired cracks and splits are allowed in any length and up to 25mm in width. If cracks and splits are located on the back face, a maximum of 3 are allowed no more than 35mm wide.
- **Knotholes:** An unlimited number of knotholes up to 65mm wide are allowed. If knotholes are located on the back face, a maximum of 3 are allowed no more than 80mm wide.
- **Repairs:** An unlimited number of different repairs are allowed.

C Grade

C Grade plywood is a **structural grade** designed for applications where strength and durability are required aesthetics are not a priority. It is manufactured to meet the requirements of AS/NZS 2269.0:2012 for structural plywood.

The face veneer of C Grade plywood may contain sound knots less than 50 mm, filled splits, and other minor imperfections that are sanded smooth but not repaired for appearance. These defects are acceptable as long as they do not compromise the structural integrity of the sheet.

Attributes and Allowable Defects

☑ **Allowable Defects:**

- Sound knots up to 50 mm in diameter
- Filled splits and cracks
- Discoloration or minor surface blemishes
- Limited open defects that are filled and sanded

☑ **Positive Attributes:**

- Strong and durable for structural use
- Cost-effective compared to higher-grade plywood
- Suitable for bracing, flooring, and roofing substrates
- Manufactured with A-Bond glue for moisture resistance

☑ **Typical Applications are:**

- Wall bracing systems
- Floor and roof diaphragms
- Subflooring and underlay
- Formwork for concrete
- Deck and roof substrates
- Non-visible structural components

It is ideal for **membrane substrates**, **temporary structures**, and **areas where the plywood will be covered or not exposed to view.**

Face Grade Criteria

According to AS/NZS 2269.0:2012, the face grade of C Grade plywood is defined by the presence and treatment of natural defects:

- Knots must be sound and limited in size
- Splits and cracks must be filled
- No open knotholes or voids allowed on the face
- Surface must be sanded to a minimum of 150 grit for face veneer
- No synthetic repairs or decorative finishing requirednzwoodproducts

This grading ensures that while the sheet may not be visually perfect, it meets the mechanical and durability standards required for structural applications.

An Grade - V-Groove

The “Groove Face” plywood features a distinctive grooved surface that enhances aesthetic appeal while adding texture and depth to various applications. Ideal for interior wall panelling, it creates a visually interesting linear pattern that transforms both residential and commercial spaces. The grooves not only conceal imperfections but also minimise the appearance of seams in larger installations.

Engineered for durability and stability, V-Groove Face plywood maintains its structural integrity while offering a stylish finish. It’s versatile enough for furniture design, contributing modern flair to tables, shelves, and cabinetry. Additionally, its surface can be easily painted or stained for customization.

☑ Typical applications are:

- Wall panelling
- Decorative features
- Furniture design

Face grade criteria

- **Sanding:** Sanding quality, 150 Grit.
- **Appearance:** High quality solid face, normally clear.
- **Repairs:** Boat type patches or synthetic repairs are not allowed.
- **Discoloration:** Discoloration attributable to lumber is allowed.
- **Tight Knots:** Loose and tight knots up to 10mm wide are allowed, only if they are repaired with wood-based putty.
- **Cracks and Splits:** Unrepaired cracks and splits are allowed up to 1mm wide if the length does not exceed 100mm. Wood based putty repairs are allowed with a maximum width of 1mm and unrestricted length; 2mm if the length is less than 300mm; and one repaired crack 2mm wide if the length is less than 500mm.
- **Gum Streaks:** Gum streaks are allowed if they are sound and light colored.

A - face

A Face plywood is distinguished by its high-quality veneer, providing an elegant and polished appearance suitable for a variety of applications. This premium surface makes it an ideal choice for furniture, cabinetry, and architectural features where aesthetics are paramount. The smooth, attractive finish of A Face plywood enhances the visual appeal of interiors, making it a preferred option for high-end projects. In addition to its striking appearance, A Face plywood is engineered for durability and stability, ensuring it can withstand the demands of various environments. Its quality construction means it maintains its shape and strength over time, even in challenging conditions. The plywood can also be easily finished with paints or stains, allowing for further customisation to match specific design visions.

☑ Typical applications are:

- High-end furniture
- Decorative cabinetry
- Wall panelling
- Retail displays
- Architectural features
- Ceiling and wall linings
- Soffit Lining

Face grade criteria

- **Sanding:** Sanding quality, 150 Grit.
- **Appearance:** High quality solid face, normally clear.
- **Repairs:** Allows up to 6 boat type patches, 6 synthetic repairs and wood-based putty repairs.
- **Discoloration:** Discoloration attributable to lumber is allowed.
- **Tight Knots:** Tight knots are allowed up to 5mm wide, with presence of small inner cracks.
- **Cracks and Splits:** Cracks and splits repaired with wood-based putty are allowed up to 1mm wide and unrestricted length; 2mm if length is no more than 300mm, and one repaired crack 2mm wide if the length is less than 500mm.

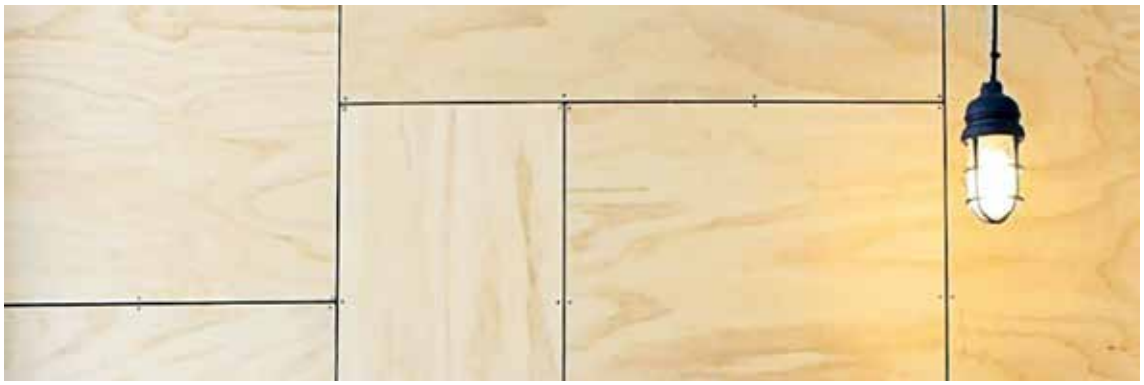
4. Understanding Structural Plywood

To meet the AS/NZS 2269 every sheet of structural plywood must have the following on the back of the sheet:

Example only

Brand name:	Suppliers Name
Panel construction code:	21-30-7 (21mm –face veneer thickness x 10 – number of veneers)
Intended application:	Structural
Face and Back grade:	CD
Glue bond:	A bond
Standard:	AS/NZS 2269:2004
Stress grade:	F8 or F11
Formaldehyde emissions class:	E0
Manufacturing mill:	Suppliers Mill

- In New Zealand “structural plywood” means it has been tested and third party verified according to the standard AS/NZS 2269.
- The strength rating is called an “F rating”.
- Any plywood that is being used as a “bracing element” must meet this standard to comply with our building code.
- For any structural plywood sheet, a minimum rating of F8 is required.
- For Flooring and Roofing the sheets when installed horizontal to the Joists or Rafters will achieve an F11 rating.



Understanding F-Grades in Structural Plywood

F-grades (F8, F11, F14, F17) are stress grades defined under AS/NZS 2269.0:2012, which assign mechanical properties to plywood used in structural applications. These grades determine the plywood's ability to resist bending and deformation under load.

Grade	Modulus of Elasticity (MOE)	Modulus of Rupture (MOR)	Typical Use Cases
F8	8,000 MPa	~38 MPa	Wall bracing, flooring substrate, general structural
F11	11,000 MPa	~45 MPa	Formwork, Roofing, Wet area substrates, Flooring
F14	14,000 MPa	~55 MPa	High-load flooring, engineered Concrete Formwork Panels
F17	17,000 MPa	~65 MPa	Heavy-duty formwork, suspended slabs, tilt panels

Strength Ratings: MOE & MOR

Structural Grade F8

- **MOE (Modulus of Elasticity)** measures stiffness—how much the plywood bends under load.
- **MOR (Modulus of Rupture)** measures strength—how much load it can take before breaking.

Benefits of Using Higher F-Rated Plywood

Greater Load Capacity

- F17 plywood can handle significantly higher loads than F8, making it ideal for demanding structural applications like suspended decks and precast concrete.

Improved Durability

- Higher grades like F17 are more resistant to wear, deformation, and moisture damage due to better bonding and veneer quality.

Reusability

- F17 plywood can be reused multiple times (often 8+), reducing long-term costs despite higher upfront pricing.

Precision and Stability

- Maintains dimensional accuracy under stress, which is critical for formwork and shuttering.

Compliance and Certification

- All grades are certified to AS/NZS 2269.0 or AS/NZS 6669, ensuring compliance with NZ building codes.

IBS Product Examples

IBS CD Structural Plywood, rated F8, is a high-performance building material certified to AS/NZS 2269, ensuring it meets New Zealand's structural standards. It is engineered for strength, stability, and environmental resilience, making it suitable for demanding construction environments.

Key Features:

- **F8 Grade Strength:** Offers reliable structural performance for general load-bearing applications.
- **Marine Bonded Phenolic Glue Line:** Enhances moisture resistance, ideal for wet or humid conditions.
- **Super E0 Formaldehyde Emissions:** Promotes healthier indoor air quality.
- **Smooth Solid Face:** Sanded to 150 grit for easy finishing and painting.
- **Sustainable Resource:** Made from renewable materials, supporting eco-conscious building practices.

Applications for F8 Structural Plywood

Wall Sheathing & Bracing

- Used in timber-framed walls to improve rigidity and meet NZS 3604 bracing requirements.

Flooring Substrate

- Provides a stable base for various flooring systems, including under carpet, tiles, or floating floors.

Formwork for Concrete

- Used in temporary formwork applications due to its strength and reusability

Applications:

F8-rated plywood is commonly used in various construction projects, including:

Flooring:

It provides a stable and strong base for floors, ensuring they can support the weight of furniture and people.

Walls:

It is used in wall construction to provide structural support and stability.

Roofing:

It is suitable for roofing applications, offering the necessary strength and stiffness to support the roof structure.

Structural Grade F11

An F11 rating indicates that the plywood is suitable for heavy-load applications, often used in structural contexts where enhanced strength is critical, such as in commercial flooring and roof systems IBS F11 plywood is engineered to meet AS/NZS 2269 and AS/NZS 6669 standards, offering a balance of strength, durability, and versatility for structural applications.

Key Features:

- **F11 Strength Rating:** Designed for moderate to high structural loads, ideal for flooring, roofing, and formwork.
- **Phenolic Glue Line (A Bond):** Marine bonded for superior water resistance and long-term durability.
- **Super E0 Formaldehyde Emissions:** Promotes healthier indoor environments, suitable for residential and commercial use.
- **Smooth Sanded Face (180 grit):** Ready for finishing—painting, staining, or overlay.
- **Plastic Tongue & Groove (Plyfloor & Plyroof):** Ensures secure interlocking and easy installation.
- **Reusable (Formply):** IBS Builders Grade® Formply F11 can be reused 5–8 times in concrete formwork applications.

Applications:

Structural Flooring Substrate – IBS Plyfloor

Used in timber-framed buildings as a robust subfloor. H3.2 treatment protects against fungal decay and insect attack. Compliant with NZS 3602 and E2/AS1 moisture standards.

Roofing Substrate – IBS Plyroof

Engineered for New Zealand roofing conditions. Suitable for shingle or tile applications and sheet diaphragm bracing. Complies with NZ Building Code Clause B1 and B2.3.

Concrete Formwork - IBS Builders Grade® Formply

Provides a clean finish for in-situ concrete pouring. Ideal for proprietary shutter systems and engineered formwork designs. Meets AS 3610:1995 for concrete formwork. Certified to AS/NZS 2269.0 and AS6669, reusable 5–8 times, moisture-protected edges, WBP phenolic glue

Sheet Diaphragm Bracing - IBS Plyroof

Used in walls and roofs to resist lateral loads from wind and earthquakes. Suitable for residential and commercial structures

Wet Area Substrate - IBS Plyfloor

When treated, F11 plywood is suitable for wet areas like bathrooms and laundries, offering

structural integrity and moisture resistance.

Structural Grade F17

IBS Hardcore Formply F17 is a premium structural plywood designed for high-load formwork applications. It is fully certified to AS/NZS 6669:2016 and meets the performance requirements of NZS 3101:2006 and AS 3610.1 for concrete formwork.

Key Features:

- **F17 Stress Grade:** Engineered for demanding structural loads, offering superior strength and stiffness.
- **11-Ply Hardwood Veneer Layup:** Provides exceptional durability and resistance to deformation.
- **Water Boil Proof (WBP) Phenolic Glue Line:** Ensures moisture resistance and long-term performance in wet environments.
- **Anti-Abrasive Overlay:** 130–160 gm/m^2 Stora-Enso protective paper for a smooth concrete finish and extended reusability.
- **Super E0 Formaldehyde Emissions:** Promotes healthier work environments.
- **Edge Sealed with Water-Resistant Paint:** Protects against moisture ingress and delamination.

Applications for IBS Hardcore Formply F17

Heavy-Duty Concrete Formwork

- Ideal for supporting in-situ concrete structures requiring high load-bearing capacity and dimensional stability.

Tilt Panels and Precast Moulds

- Used in proprietary shutter systems and engineered formwork for large-scale commercial and industrial builds.

Suspended Slabs

- Suitable for elevated concrete slabs where strength and rigidity are critical to prevent deflection.

Bridge Decks and Infrastructure

- Applied in civil engineering projects where structural integrity and reusability are essential.

Multi-Use Formwork Systems

- Can be reused 5–8 times per side when properly maintained, offering long-term cost efficiency.

5. Treatment

Treatment Options

Plywood is often treated to enhance its durability, resistance to moisture, and overall performance. Here are the common treatment processes:

- **Pressure Treatment:** This involves placing plywood in a pressure chamber where preservatives are forced into the wood. This treatment helps protect against rot, insects, and fungi. It's often used for plywood intended for outdoor use.
- **Chemical Treatments:** Various chemicals, such as borates or fire retardants, can be applied to plywood. Borates help prevent decay and insect damage, while fire retardants reduce flammability.
- **Waterproofing:** Plywood can be coated with water-resistant finishes or sealants, making it suitable for wet environments. This treatment is common for marine-grade plywood.
- **Surface Treatments:** Finishes like varnish, paint, or stains can provide additional protection and aesthetic appeal. These coatings help resist moisture and wear.
- **Thermal Modification:** This process involves heating plywood to change its properties, improving dimensional stability and resistance to decay without the use of chemicals.

Below are some of of the treatments options that IBS offers in some of its Plywood :

H3.2 CCA

Treated plywood is impregnated to H3.2 CCA (Copper Chromium Arsenate) hazard class treatment to AS/NZS 1604.1:2021 (Specification for preservative treatment). H3.2 CCA treatment leaves a green appearance to the ply sheet. CCA treated plywood is available in all thicknesses.

Common uses/applications for H3.2 CCA:

- Construction
- Landscaping
- Marine Applications
- Agricultural Structures
- Outdoor Storage

H3.2 CCA Water-Borne Options: Used in any exterior applications where there may be water present, such as decks, fences, and landscaping features. Ideal for structures exposed to moisture, ensuring resistance to decay and insect damage.

H3.2 MCA

Micronised Copper Azole treated timber is a non-arsenic based treatment that is considered a more environmentally friendly option over CCA.

Common uses/applications for H3.2 MCA:

- Construction
- Landscaping
- Marine Applications
- Agricultural Structures
- Outdoor Storage

H3.2 MCA Water-Borne Options: Used in any exterior applications where there may be water present, such as decks, retaining walls, and outdoor furniture. Suitable for structures exposed to moisture, providing resistance to decay and pests while maintaining durability.

H3.1 LOSP

Light Organic Solvent Preservative - Is a green or clear solvent based treatment. Solvent based preservatives can emit a strong odour, ensure the area is well ventilated while the solvent levels reduce during construction.

Common treatments for H3.1 LOSP:

- Outdoor Structures
- Landscaping
- Wooden Furniture
- Agricultural Structures
- Construction

LOSP based treatment (or H3.1) is available on request only and is subject to terms and conditions.

6. IBS Plywood Products

CD Structural Plywood

CD Structural Plywood is an engineered wood product made from thin layers of veneer glued in a cross-laminated configuration. The “C” and “D” grades indicate lower-quality surfaces, with “C” being better than “D,” which may have knots and imperfections. Despite this, CD Structural Ply is valued for its strength and durability, making it ideal for construction applications such as flooring, wall sheathing, and roof decking. Its layered design enhances resistance to warping and splitting, offering versatility for both residential and commercial projects.

Common uses for CD Structural plywood:

- Subflooring in buildings
- Wall Sheathing
- Roof Decking
- Formwork
- Shear walls for stability
- Siding
- Bracing

Builders Grade® Ply

IBS Builders Grade® Ply is a versatile, non-certified plywood solution designed for a wide range of interior and light construction applications. Manufactured to a high standard, it offers a smooth, sanded face and consistent core quality, making it ideal for wall and ceiling linings, cabinetry, furniture, and general fit-out work. Available in both untreated and H3.2 treated options, Builders Grade® Ply combines durability, affordability, and ease of use making it a go-to choice for builders and DIYers alike. Proudly introduced to the New Zealand market by IBS in 2011, this product has become a trusted staple for residential and commercial projects seeking reliable performance without the need for structural certification.

Common uses for Builders Grade® Ply:

- Wall Sheathing
- Crating and Packaging
- Temporary Structures
- Industrial and Commercial Uses
- Furniture Components
- Non-Structural
- Where non load bearing is required

Plyfloor

Plyfloor is a specially engineered plywood product designed for flooring applications, offering a combination of strength and stability. Its primary use is as a structural flooring system, providing a solid and reliable base for both residential and commercial buildings. The plywood's durability makes it ideal for high-traffic areas, ensuring long-lasting performance. In addition to its flooring capabilities, Plyfloor can also serve as a subflooring solution, enhancing the structural integrity of the entire flooring system. It is often used in conjunction with other materials to create a smooth and even surface, facilitating various floor finishes.

Common uses for Plyfoor:

- Flooring
- Wall Sheathing
- Roof Decking
- Formwork
- Furniture and Cabinetry
- Temporary Structures

V-Groove Ply

V-Groove Ply features a grooved surface that creates an attractive linear pattern. Primarily used for interior wall panelling, it adds texture and warmth, and is also popular for ceiling treatments. In furniture design, it offers striking surfaces for tables, shelves, and cabinetry. Its grooved design enhances aesthetics and can help reduce sound transmission, making it a versatile choice for custom decorative features in unique spaces.

Common uses for V-Groove Ply:

- Interior Wall Panelling
- Ceiling Treatments
- Furniture Design
- Accent Walls
- Cabinetry Features
- Custom Shelving Solutions
- Acoustic Applications
- Retail Display Fixtures

Birch Face Poplar Core Ply

Birch Face Poplar Core Ply combines attractive birch veneer with a strong poplar core, making it ideal for various applications. Commonly used in cabinetry, it enhances kitchens and bathrooms and is popular in furniture making for its sturdy yet lightweight properties. Its smooth surface is suitable for interior millwork, mouldings, and trim, as well as doors and drawer fronts. Additionally, it's used for wall panelling in both residential and commercial settings, adding sophistication and warmth. Its strength and versatility also make it great for custom shelving and retail displays.

Common uses for Birch Face Poplar Core Ply:

- Cabinetry
- Furniture Making
- Interior Millwork
- Tables and Chairs
- Drawer Fronts
- Wall Panelling
- Doors
- Custom Shelving
- Decorative Fixtures
- Internal lining

UV Coated Birch Face Ply

UV Coated Plywood is a versatile product with a durable UV-cured finish that offers a sleek appearance and enhanced protection against moisture and wear. It's commonly used in cabinetry, furniture manufacturing, and interior millwork, providing a strong yet lightweight option for tables, chairs, mouldings, and trim. Additionally, it's ideal for doors and panels, combining durability with an attractive look. In both residential and commercial settings, UV Coated Plywood is also popular for wall panelling, adding a modern touch and resilience to interiors.

Common uses for UV Coated Ply:

- Cabinetry
- Furniture Manufacturing
- Interior Millwork
- Mouldings and Trim
- Doors and Panels
- Architectural Elements
- Internal lining

Builders Grade® Poplar Core Ply

Builders Grade® Poplar Core Ply is a versatile plywood product characterised by its pine veneer face and poplar core, combining aesthetic appeal with structural integrity. One of its primary uses is in cabinetry, where the attractive pine surface enhances the overall look of kitchen and bathroom units. It is also widely employed in furniture manufacturing, providing a lightweight yet strong material for tables, chairs, and other pieces. Additionally, it is commonly used for doors and panels, offering both durability and a pleasing appearance. In residential and commercial spaces, Pine Face Poplar Core Ply is often utilised for wall panelling, adding warmth and texture to interiors.

Common uses for Builders Grade Poplar Core Ply:

- Cabinetry
- Furniture Manufacturing
- Interior Millwork
- Doors and Panels
- Wall Panels
- Shelving
- Custom Projects
- Internal lining

Okoume Face Poplar Core Hardwood Ply

Hardwood Ply is a versatile material designed for a variety of applications, and aesthetic appeal. Its primary use is in furniture making, where its rich grain and finish enhance the beauty of tables, chairs, and cabinetry. This plywood is also widely employed in interior millwork, including mouldings and trim, offering a refined look and ease of machining. It is commonly used for wall panelling, adding texture and sophistication to interiors. In architectural applications, Hardwood Ply is employed for doors and window frames, ensuring both strength and an attractive finish.

Common uses for Hardwood Ply:

- Furniture Making
- Cabinetry
- Wall Panelling
- Millwork and Trim
- Doors and Window Frames
- Musical Instruments
- Custom Shelving
- Internal lining

Non Structural Formply

Non Structural Formply is a cost-effective, lightweight plywood panel designed for temporary applications where structural certification is not required. Manufactured with a smooth phenolic-coated surface, it delivers a clean finish ideal for non-load-bearing formwork, hoardings, packaging, and general-purpose site use. While not certified to AS/NZS 2269 or AS/NZS 6669, it offers practical durability and ease of handling for short-term construction needs. Its sealed edges and moisture-resistant glue line provide added protection in damp environments, making it a reliable choice for builders seeking an economical solution for non-structural applications

Common uses for Non Structural Formply:

- Wall Panels
- Shelving
- Custom Projects
- Formwork

Formply F11 & F17

IBS Builders Grade® Formply and **IBS Hardcore Formply** are engineered plywood panels designed for use in concrete formwork systems, offering strength, durability, and a high-quality finish. Builders Grade Formply F11 is an 11-ply hardwood panel with a brown phenolic film face, climate-resistant WBP melamine glue lines, and sealed edges—ideal for low to moderate impact applications where cost-efficiency and reusability (up to 5–8 times per side) are key. Hardcore Formply, on the other hand, is a premium 11-ply hardwood panel certified to AS 6669:2016, available in F17 stress grade, and features a 130–160 gm/m^2 Stora-Enso overlay for superior concrete finishes. It includes a WBP phenolic glue line, Super E0 emissions rating, and water-resistant edge sealing, making it suitable for high-load, high-performance formwork in demanding environments. Both products are part of IBS's commitment to sustainable building solutions and are designed to meet New Zealand's structural and environmental standards.

Common uses for Formply:

- Concrete Formwork
- Plywood Sheathing for Construction
- Structural Panels
- Temporary Works
- Road and Bridge Construction
- Retaining Walls
- Dock and Wharf Construction

7. Common issues with Plywood

Issues and Solutions

By addressing these common problems and providing solutions, customers can make more informed decisions, ensuring that their plywood meets both their functional and aesthetic needs.

Customer doesn't like the Face

- Usually, the customer expectation doesn't match the grade. Make sure you look at the specification before you buy.

Edge Damage

- This can happen mainly in transit so important to make sure that inwards goods check the product when it is received.

Delamination

- This is very unusual with modern facilities as the sheets are Ultra-Sounded on the production line.
- However, with the treatment process being so aggressive on the ply it can happen.
- This can happen when the core veneers are not glued together well or have just let go.

Bubbling

- This usually occurs when moisture is trapped underneath the face veneer.
- It looks bad but usually does not affect the structural integrity of the ply.
- The affected area is removed preferably with a router or a chisel and then filled with either an epoxy filler or Builders Bog.
- You can then paint over again with confidence.

Surface Checking

- Occurs when product is left outside – unsealed with large variations in Wet and Dry Conditions.
- As plywood is a timber product this is quite normal and would not be covered under any kind of warranty.

Moisture Absorption

- Plywood is susceptible to moisture absorption, which can lead to swelling and warping. It is essential to store plywood in a dry environment and use moisture barriers during construction to minimise exposure.
  For applications in high-humidity areas, selecting moisture-resistant grades of plywood can enhance durability and performance. Seal the product immediately after installation to prevent this from occurring.

Inconsistent Thickness

- Inconsistent thickness can sometimes occur during the manufacturing process, leading to challenges during installation. This issue may result in uneven surfaces, which can affect the overall finish. To avoid problems, it's advisable to measure plywood sheets before installation and select products from reputable suppliers known for quality control.

Splitting and Cracking

- Splitting and cracking can occur due to environmental factors or improper handling. These issues are more prevalent in thicker plywood sheets or those subjected to significant stress. To minimise the risk, it is crucial to follow recommended cutting and fastening techniques, and to avoid exposing the plywood to rapid temperature changes or excessive moisture.

Warranty Limitations

- Customers should be aware of warranty limitations when purchasing plywood products. Many manufacturers do not cover natural occurrences like surface checking or minor imperfections. Educating customers about what is covered under warranty can help set realistic expectations and foster a positive relationship.

Weather Checking

- Weather checking is a common issue in plywood exposed to outdoor elements without proper protection. It appears as small cracks or splits on the surface, often due to fluctuations in moisture and temperature. When plywood absorbs moisture and then dries quickly, it can lead to stress on the material. While this may not compromise structural integrity, it can affect appearance and longevity. To prevent weather checking, it's important to apply a suitable sealant and store plywood in a controlled environment when not in use.

8. Frequently Asked Questions

Q. What type of glue is used to manufacture IBS products?

A. All IBS Products is glued with either a WBP A-bond Exterior Phenol-Formaldehyde resin or a moisture resistant glue.

Q. What can I do if bubbling occurs?

A. Plywood bubbling occurs when moisture is trapped underneath the face veneer in an open defect below. When exposed to the sun, this moisture is heated up and if the process is repeated over time, a bubble can occur. This is not necessarily a delamination of the glue line and, as such,should not affect the structural integrity of the panel. In order to fix the bubble simply remove the portion of the affected face veneer and allow the area to dry fully and use a suitable filler such as builders bog or epoxy filler. To minimise potential bubbling we suggest that for all exterior applications the product is well sealed and protected as soon as possible after the installation, before it's exposed to wet weather conditions.

Q. What is the F-rating of IBS Ply?

A. Our Structural Square-edge and Bracing are rated F8 in accordance to AS/NZS 2269, which includes testing for parallel and perpendicular bending,stiffness, tensile,shear and compression strength. IBS Flooring is rated F11, considering its outstanding performance in parallel bending and stiffness strength. We also have F11 and F17 Formply.

Q. Should you care if a product is certified to AS/NZS 2269?

A. Yes and no. For applications where the structural integrity of the panel is vital for a project designed using specific structural requirements, we recommend that you use plywood certified to AS/NZS 2269. For applications where certification is not required, IBS Builders grade have not been certified to AS/NZS 2269; however, it is certified according to international standards such as the European CE-EN 13986, US PS1-09, or Japanese JAS. These products are manufactured under strict quality control, offering benefits such as strength and stiffness, Super-E0 low formaldehyde emissions, WBP A-Bond glueline, and are produced from PEFC-certified sustainable Radiata Pine plantations.

Q. Who is SAI Global?

A. SAI Global is an independent certification organisation,recognised globally through the 'five ticks' StandardsMark™ brand, a symbol for reliability, quality assurance and safety. IBS has the privilege to display one of these very highly regarded marks. The recognition in the marketplace gives our certification a cutting edge over competitors who are not certified by SAI Global. For our customers, the StandardsMark™ means that IBS takes quality and safety seriously. Research surveys indicate that the 'five ticks' StandardsMark™ has 82% general awareness in New Zealand.

Q. What is the difference between Certified AS/NZS 2269 Structural and Non Certified Plywood?

A. Where ever you are using Plywood to form part of the bracing, durability or structural integrity of a building you should always use Certified Structural products. This gives you the assurance that all of the tests and checks have been done to give you confidence that the product will always do the job that it was designed to do. There are however a lot of applications where this is not relevant such as hoardings, building the dog house, lining, the interior wall of a garage and others. For these applications IBS also has various options.

Q. What is a boat patch?

A. This is a repair on the face veneer to improve the visual appearance of the product. Instead of a filler being used the imperfection is punched out using a press and a replacement piece of veneer the exact same size is substituted in the shape of a leaf. Once the product is either painted or clear finished it is very hard to see this repair and is a much preferred option.

Q. What does CCA Treatment Stand for?

A. CCA stands for Copper Chromium and Arsenate, it is a waterborne preservative that will usually be green in colour and will give you a H3.2 Treatment Standard. The product is placed in a compression chamber and completely submerged under pressure to force the treatment inside the ply as much as possible, it is then taken out of the chamber, wooden fillets are placed in between each sheet and then placed inside a kiln. The product is then dried to around 18% moisture content to give the product stability. One of the most important things to remember with CCA treatment is that you must reseal any cut edges of the product with a preservative product such as Metalex Green End Seal.

Q. What does MCA treatement stand for?

A. MCA stands for Micronized Copper Azole, which is a type of wood treatment that provides protection against fungal decay and insect damage. It is commonly used for outdoor applications. This will give you a H3.2 Treatment Standard. The product is placed in a compression chamber and completely submerged under pressure to force the treatment inside the ply as much as possible, it is then taken out of the chamber, wooden fillets are placed in between each sheet and then placed inside a kiln. The product is then dried to around 18% moisture content to give the product stability. One of the most important things to remember with MCA treatment is that you must reseal any cut edges of the product with a preservative product such as Metalex Green End Seal.

Q. Should I always ask for Marine Ply for an application that requires exterior glue?

A. The answer is yes only if you are using the product in the Marine industry. For most construction uses you are really thinking that the product should be Marine Bonded which is an A-Bond glue line. Some IBS products fall into this category so you can be assured of the glue line.

Q. What does LOSP Treatment stand for?

A. LOSP stands for Light Organic Solvent Preservative. The biggest difference is that unlike CCA, which is a waterborne wet process LOSP,is a solvent based dry process. LOSP treated plywood gives a H3.1 Standard level of treatment and leaves the ply pretty much with the same look as it was before it was treated. It is an ideal treatment for Claddings and for Soffit Lining. With LOSP treatment the most important thing is that you allow the product to flash off which must be done in a well-ventilated area for at least 48 hours. Although this should always be done prior to the product being sold to the general public, it is always as good idea to allow some time prior to installation to make 100% sure.

Q. How is IBS Plywood graded?

A. All Plywood is graded with a simple system of ABCD. Basically the A grade is the best and the D grade is the lowest. A CD grade means that one face of the sheet has a C grade ply and the other has a D grade. One side of the sheet will always be the face side and will be sanded a little more smoothly than the other side. The grading itself is done initially by computer where there is a scan done of the face veneer and compared with some set variables to give the grade.

Q. How is Plywood Constructed?

A. Plywood is constructed by first peeling a log to a standard veneer thickness and these veneers are glued together with the grain at 90 degrees to each other. This gives the strength and stability that makes Plywood so strong and versatile. These veneers are then pressed together with high heat and pressure,sanded and graded for the end use.

Q. What is surface checking?

A. This occurs with all timber that is left outside to weather. It is caused with a combination of sun, rain and wind that wets and dries out the face veneer over time. It is especially in the southern hemisphere prominent on the northern face of a building. It is a normal occurrence with the fibres in the face of the ply and can be minimised with sealing the surface after installation and trying to keep the product as much as possible protected from the elements by using things such as a good soffit size.
Surface checking is a normal characteristic of plywood when used outside and does not affect the structural integrity of the product.

9. Additional Resources

Additional Information

For additional information on all products in this document refer to:

- IBS Design and Installation Guide
- IBS Product Specification
- IBS CAD drawings
- IBS Installation and Warranty guides
- www.ibs.co.nz
- 0800 367 759

Designing outside of scope

If you're designing or installing with an IBS product, please ensure that you follow the correct Design and Installation guides. It is important to adhere to the specifications in the document, as deviating from the guide may affect your warranty.

10. Limitations

The information contained in this document is current as at September 2025 and is based on data available to IBS Sustainable Building Products at the current time.

All photographic images are intended to provide a general impression only and shall not be relied upon as an accurate example of IBS products.

IBS reserves the right to change the information contained in this document without prior notice. It is your responsibility to ensure that you have the most up to date information available, including at the time of applying for a building consent.
You can call 0800 367 759 or visit www.ibs.co.nz to obtain current information.

IBS has used all reasonable endeavours to ensure the accuracy and reliability of the information contained in this document. However, to the maximum extent permitted by law, IBS assumes no responsibility or liability for any inaccuracies, omissions, or errors in this information nor for any actions taken in reliance on this information.

Notes:

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September 2025

IBS Plywood Guide

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IBS
SUSTAINABLE BUILDING PRODUCTS