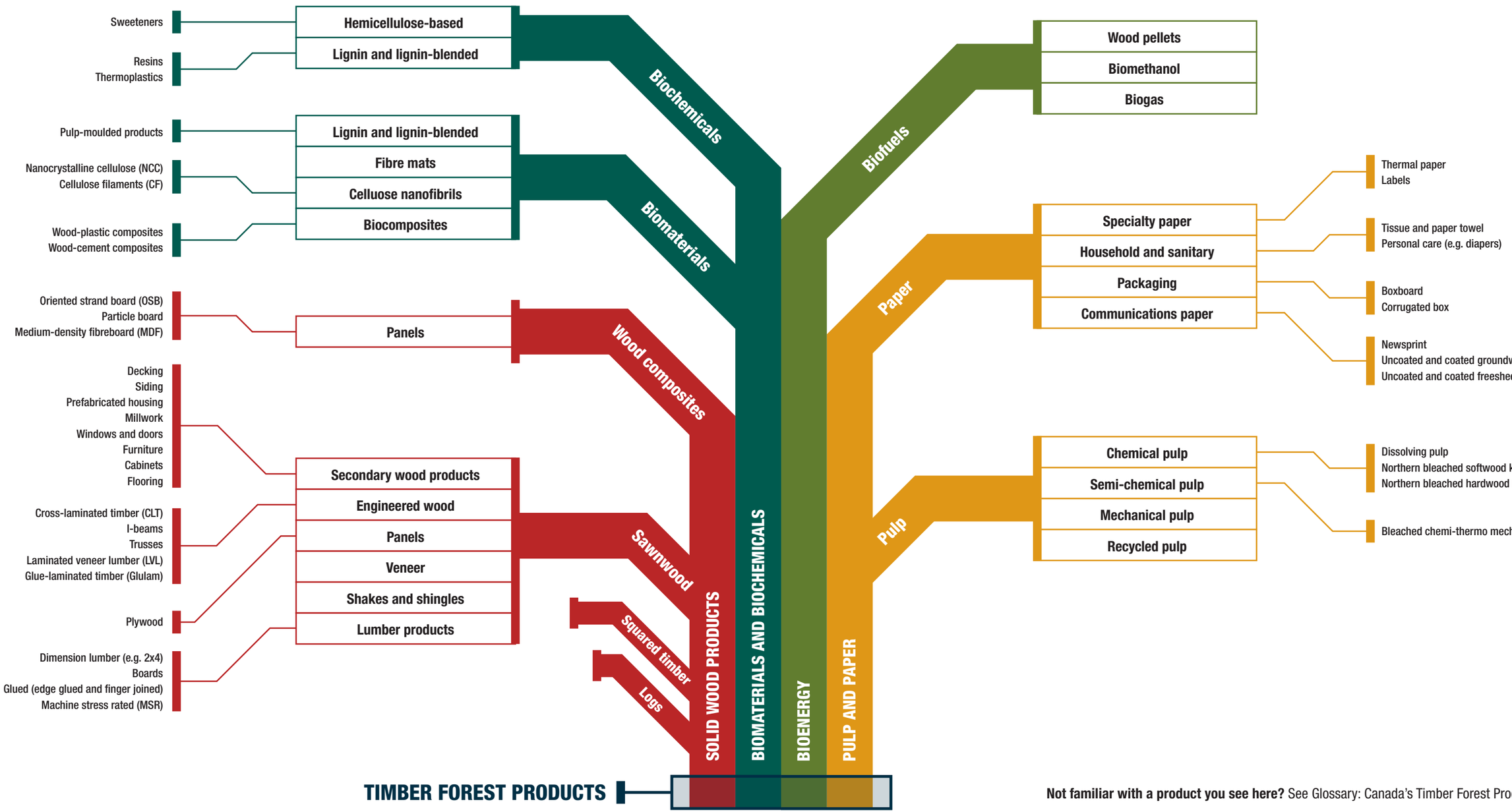
CANADA'S TIMBER FOREST PRODUCTS

Canada's timber forest products have come a long way since the great white pines were harvested pre-Confederation to use as ship masts and squared timber. Through the development of increasingly innovative methods of processing and refining wood, its residues and waste products over time, Canada's forest sector has diversified its range and versatility of timber products to keep a competitive edge. This graphic represents the major groups – but not the entire range – of timber forest products produced in Canada.



Not familiar with a product you see here? See Glossary: Canada's Timber Forest Products on page 58.

Glossary: Canada's timber forest products

SOLID WOOD PRODUCTS

Logs: Trunk or large limbs of a felled tree. Used for log homes, solid wood and pulp products.

Squared timber: A large, squared piece of a log at least 5.5 inches wide. Used to form post-and-beam style buildings.

Sawnwood: Wood produced by sawing logs into smaller parts for further processing.

Lumber products: Wood of different sizes for different end-uses.

Dimension lumber: Softwood lumber of standardized sizes that is usually 2 inches thick (e.g. 2x4). Used to frame wood buildings like houses.

Boards: Softwood lumber of standardized sizes that is typically less than 2 inches thick. Used in manufacturing and carpentry.

Glued wood: Smaller boards glued or joined together to make larger or longer pieces of wood for structural and non-structural uses.

Machine stress rated (MSR): Softwood dimension lumber mechanically tested for strength. Used for engineered wood products such as roof trusses.

Shakes and shingles: Thin, tapered pieces of wood (usually cedar) used for roofing. Shakes are split from a block of wood. Shingles are sawn and more precisely milled.

Veneer: A thin layer of wood prepared by peeling or slicing a log. Used to overlay other wood products like cabinets, doors and furniture.

Panels: Sheets of wood or fibres glued together under heat and pressure.

Plywood: A structural panel made of multiple layers of wood veneers glued together with the grain of each layer perpendicular to that of the next. Used as a structural, load-bearing component of buildings.

Engineered wood: Manufactured wood products made from wood fibres and/or solid wood that can be designed and made to architects' and engineers' specifications:

Cross-laminated timber (CLT): Large structural panels made of multiple layers of lumber glued together at right angles to each other. Used in walls, floors and roofs; an alternative to concrete and steel systems.

I-beams: Structural wood products joined in the shape of an I. An alternative to dimension lumber in floor joists (supports) and roof rafters that uses 50% less wood.

Trusses: Structural frames with a triangular arrangement of webs and chords to transfer loads to reaction points. Used as a structural support in residential and non-residential roof structures.

Laminated veneer lumber (LVL): A structural material made of multiple layers of veneer glued together under heat and pressure. A substitute for dimension lumber.

Glue-laminated timber (Glulam): A structural product made of multiple pieces of lumber glued together in a desired form. Used in non-residential structural applications, often as part of architectural or aesthetic design.

Secondary wood products: Use of panels or lumber to create higher-value manufactured products, such as flooring, decking, furniture and cabinets.

Wood composites: Products made from wood waste or residues created in the manufacturing of other wood products.

Panels:

Oriented strand board (OSB): A structural panel made of strands or flakes of wood glued and pressurized together and oriented in different directions to achieve desired properties. Used as a load-bearing component in residential buildings.

Particle board: A non-structural panel made of small wood particles like shavings or sawdust. Used as a raw material in the production of finished goods, including ready-to-assemble furniture and cabinets.

Medium-density fibreboard (MDF): A non-structural panel made of very fine wood fibres. Used as a raw material in the production of finished goods, including ready-to-assemble furniture and cabinets.

BIOMATERIALS AND BIOCHEMICALS

A growing and diverse class of forest biomass-based products that are not typical pulp and paper or wood products.

Biomaterials: a range of novel materials made from forest biomass and typically used in industrial applications.

Biocomposites: Made of a resin matrix and reinforced with natural fibres.

Wood-plastic composites: Non-structural materials made from wood residues and recycled plastic. In North America, used outdoors as residential decks and railings; in Europe, used as automobile parts.

Wood-cement composites: Produced by mixing small pieces of wood with cement under pressure. Non-structural uses include acoustic ceiling tiles, siding and roadside noise barriers; structural uses include concrete-filled insulating forms.

Cellulose nanofibrils: A nanomaterial commonly processed into a liquid or gel form. Strengthens paper and board products and can also be used in biocomposites, paints and other high-value products.

Nanocrystalline cellulose (NCC): Cellulose in crystalline form processed into a solid flake, liquid or gel form. Used in the manufacture of new and advanced materials requiring, for example, strength and electromagnetic response.

Cellulose filaments (CF): An ultra-lightweight ribbon-like material with unique bonding properties. Provides extra strength and improved absorption in products such as facial tissues and paper towels without sacrificing softness.

Fibre mats: Carpet-like mats made from wood-fibre, with a variety of uses, including automotive composite mats and building insulation.

Lignin and lignin-blended (See also Biochemicals): One of the main components of wood, lignin gives wood its strength. It has a variety of uses, including:

Pulp-moulded products: Papermaking pulp moulded into packaging materials that snugly fit or separate fragile articles. Used for products such as egg cartons, domestic and utility trays, and bottle protectors.

Biochemicals: a range of chemical substances made from forest biomass and typically used in industrial applications.

Lignin and lignin-blended (See also Biomaterials): Lignin is one of the main components of wood, giving it its strength. Can be used as an alternative to fossil–fuel–based products. Has a variety of uses, such as:

Resins: Viscous (liquid or semi-liquid) substances derived from forest biomass and used as adhesives in industrial applications.

Thermoplastics: The most commonly used material in plastics processing. Softens with heat and solidifies when cooled.

Hemicellulose-based: One of the main components of wood, hemicellulose is a sugar that can be used as fuel or converted into other bioproducts, including sweeteners.

BIOENERGY

Biofuels: A fuel derived from plant biomass by chemical or geological processes.

Wood pellets: A fuel made from wood shavings, bark, sawdust and chips compressed or bound together. Low moisture content and easily transported over long distances.

Biomethanol: Methanol produced from biomass instead of the conventional raw material and processes.

Biogas: A combustible gas produced by the decomposition of biological materials (e.g., forestry residues and municipal waste).

PULP AND PAPER

Pulp: A fibrous material made by breaking down wood with mechanical force or chemicals. Used to produce paper and other materials.

Recycled pulp: Made from paper and packaging material. Used to manufacture new communication papers, packaging and paper towels.

Mechanical pulp: Made from wood fibres ground into very fine particles. Used to make newsprint and some other communications papers.

Semi-chemical pulp: Made from wood fibres broken down by both chemical and mechanical processes.

Bleached chemi-thermo mechanical pulp (BCTMP): A semi-chemical pulp that has been bleached. Used to produce printing and writing papers, coated papers, packaging and tissue.

Chemical pulp: Made from wood fibres broken down by chemicals (usually kraft or sulphite) instead of mechanical force.

Dissolving pulp: Has a high hemicellulose content and can be made from hardwood or softwood tree species. Used mostly for non-paper applications, such as manufacturing rayon and compounds for food and cosmetics.

Northern bleached softwood kraft (NBSK): Made from northern softwood species that grow in temperate forests. Used to make a wide variety of products, from communication papers to packaging and tissue and towel products.

Northern bleached hardwood kraft (NBHK): Made from northern hardwood species. Used to make a wide variety of products, from communication papers to tissue and paper towels.

Paper: Sheets of material produced from wood pulp. Has many uses, including for writing or printing on and packaging.

Communications paper: The most commonly produced paper in Canada. Includes:

Newsprint: Made from mechanical pulp. Used mostly to make newspapers.

Groundwood: Made from at least 20% mechanical pulp, and can be bleached or unbleached and coated or not, depending on desired characteristics. Uses include higher-quality coloured printing and magazines.

Freesheet: Made from at least 80% chemical pulp, and can be bleached or unbleached and coated or not, depending on desired characteristics. Uses include office paper for printing and copying.

Packaging: Thicker and stronger paper sheets used to wrap or contain materials and goods for storage and transport.

Boxboard: (also known as paperboard) A thick, strong paper material suitable for packaging lighter products, such as cereal or batteries.

Corrugated box: (also known as containerboard) Made from sheets of smooth boxboard with a wavy sheet in the middle.

Household and sanitary: Made for various uses around the home and for industrial and commercial purposes. Household papers include facial tissues, toilet paper, hand towels and napkins. Sanitary papers include products like baby diapers, adult incontinence products and sanitary napkins.

Specialty paper: A variety of distinctive papers designed and produced for particular uses, such as:

Thermal paper: Coated with a chemical that changes colour when exposed to heat. Used in thermal printers, cash registers and credit card terminals.

Labels: Have an adhesive on one side and are often coated on the other, for uses such as weight and price labels at grocery store.