



Molded Fiber Industry Glossary

Version 1

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Contents

A	2
B	3
C	4
D	5
E	7
F	8
G	9
H	10
I	11
J	12
K	13
L	14
M	15
N	16
O	17
P	18
Q	20
R	21
S	22
T	23
U	25
V	26
W	27
X	28
Y	29
Z	30

A

Additive

A substance added to the pulp slurry to impart specific properties to the final product, such as water or oil repellency.

Alkenyl Succinic Anhydride (ASA)

A sizing agent used to provide water resistance to molded fiber products.

Alkyl Ketene Dimer (AKD)

A sizing agent used to provide water resistance to molded fiber products.

American Old Corrugated Cardboard (AOCC)

A North American specification grade of recovered old corrugated cardboard, defined by the ISRI guidelines, used as a recycled fiber source in molded fiber production for its strong, long fibers.

B

Bagasse

The fibrous residue remaining after sugarcane or sorghum stalks are crushed to extract their juice, used as a raw material for molded pulp.

Bamboo

A fast-growing grass used as a sustainable raw material for molded fiber production.

Biodegradable

Capable of being decomposed by bacteria or other living organisms.

Bleached Eucalyptus Kraft (BEK)

A short-fiber bleached chemical pulp produced from eucalyptus wood, valued in molded fiber furnishes for its smooth surface, high formation uniformity, and excellent printability.

Bone Dry Weight

The weight of a molded fiber product when dried to 0% moisture content, representing the absolute mass of fiber and any additives without any residual water. This measurement serves as a baseline reference for calculating moisture content and production consistency.

C

Cellulose

The primary structural component of plant cell walls, which forms the basis of paper and molded pulp products.

Coater

Machine that applies coatings to molded products.

Coating

Both the process of applying a chemical layer on the surface of a molded product as well as the actual chemical that is settled on the surface. Typically expressed in gsm (grams per square meter) dry product, or as weight percentage of the total.

Compostable

Able to break down into natural elements in a compost environment, leaving no toxicity in the soil.

Consistency

The percentage of fiber solids by weight in a pulp slurry.

Consistency Meter

An instrument used to measure the percentage of fiber solids in a pulp slurry in real time. It enables operators to monitor and control pulp consistency for uniform product quality and optimized chemical dosing.

Cure-in-the-mold

A process used in thermoforming where the product is dried and cured within the heated mold, resulting in a smooth, dense finish.

Cycle Time

The elapsed time between one forming cycle and the next on a molding machine. Typically expressed in seconds or in kick-offs per minute (KOM).

D

De-nesting

The process of separating nested molded pulp products from a stack.

Debossing

The process of creating a depressed image or design on the surface of a molded fiber product.

Deckle Sprays

Low-pressure water sprays directed at the non-screened areas of the forming tool to wash away excess fiber, producing clean, well-defined product edges and openings. [See also: Washing.](#)

Defibering Degree

The level to which fiber bundles have been separated into individual fibers during pulping or refining, directly affecting slurry uniformity, drainage behavior, and the strength of the resulting molded fiber product.

De-flaker

A machine used in stock preparation to break apart fiber bundles, shives, and flakes in the pulp without significantly cutting fibers or affecting freeness, ensuring a uniform and homogeneous slurry for molded fiber production.

Density

Physical property, describing the weight per volume. Expressed as kg/m^3 or as specific gravity.

De-trasher

A machine used in the pulping process to separate and remove contaminants such as plastics, metals, and other non-fibrous materials from the pulp stock, ensuring cleaner fiber for molded product formation.

Die Sprays

High-pressure water sprays used to clean forming dies between production cycles, removing residual fiber deposits to ensure consistent product quality on subsequent forms.

Die-cutting

The process of cutting finished molded fiber products into a specific shape or pattern using a die.

Dimensional Stability

The ability of a molded fiber product to retain its shape and size under varying environmental conditions.

Double-Lined Kraft (DLK)

A grade of recovered corrugated cardboard consisting of double-lined kraft cuttings from box manufacturing, prized as a clean, high-strength long-fiber source in molded fiber furnishes.

Draft Angle

The slight angle incorporated into the sides of a mold to facilitate the removal of the molded product, normally referenced to a vertical wall.

**Drainage**

The removal of unbound water in the process.

Drainage aid

Chemical that is designed to increase the drainage speed.

Drying

The process of evaporating water from the wet molded pulp product, typically done in a heated oven or with heated molds.

Dryness

Characterize the amount of water in a fiber product, expressed as the dry-to-wet weight ratio.



E

Electrical Heaters

Electric resistance heating elements integrated into press tools to provide precise and uniform temperature control during the hot-pressing or thermoforming of molded fiber products.

Embossing

The process of creating a raised image or design on the surface of a molded fiber product.

Exit Moisture Content

The moisture content of a molded fiber product measured immediately as it exits the dryer (Type 1 and Type 2) or directly upon release from the press tool (Type 3), prior to any atmospheric drying or equilibration.

Exit Weight

Weight measurement of product at the exit of the press tools or the oven.

Extended Producer Responsibility (EPR)

A regulatory and policy framework that makes producers financially and operationally responsible for the end-of-life management of their packaging, incentivizing the use of recyclable and fiber-based materials such as molded fiber.

F

Feathering

Excess or loosely bonded fiber remaining along the edges or openings of a molded fiber product that has not been fully removed by washing or trimming, typically requiring additional finishing to meet quality specifications.

Fiber Length

The average length of individual cellulose fibers in a pulp furnish, which influences the strength, thickness, and surface smoothness of the final molded fiber product.

Fibrillation

The mechanical treatment of pulp fibers to increase their surface area and bonding potential.

Forming

The initial stage of the molded pulp process where a vacuum is used to draw a pulp slurry onto a mesh screen, forming the shape of the product.

Forming Tool

A porous mold, typically covered with a fine wire mesh screen, that is submerged into the pulp slurry and uses vacuum suction to draw fibers onto its surface to form the initial wet shape of a molded fiber product.

Forming Vat

An open tank or vessel that holds the prepared pulp slurry into which the forming tools are submerged during the vacuum forming process. Its design ensures uniform slurry distribution and consistent fiber pickup.

Freeness

A measure of the rate at which water drains from a pulp slurry, indicating the pulp's drainage characteristics. Typically expressed in Schopper-Riegler grade (SR) or Canadian Standard Freeness milliliters (CSF).

Fiber Reinforced Thermoplastics (FRTF)

Composite materials made of a thermoplastic polymer reinforced with fibers, used in some advanced thermoforming applications.

Forest Stewardship Council (FSC) Certification

A certification scheme that ensures wood, pulp, and paper-based raw materials used in molded fiber products originate from responsibly managed forests meeting strict environmental and social standards.

Furnish

The blend of pulp, water, and additives that is used to create molded fiber products.

G

Grammage or Basis Weight

Mass per unit area of dry material, typically expressed in grams per square meter.



H

Hot Pressing

A secondary process where a molded fiber product is pressed between heated molds to create a smoother, denser surface.

How2Recycle

A standardized on-package labeling system developed in North America (United States and Canada) that provides clear, consistent instructions to consumers on how to recycle each component of a package, including molded fiber elements.

Hydro-pulping

The process of mixing recycled paper or other fiber sources with water to create a pulp slurry.





International Molded Fiber Association (IMFA)

The global trade association for the molded fiber industry.



J



K

Kraft Pulp

A type of wood pulp produced by the kraft process, known for its strength.



L

Lamination

A finishing process in which a thin layer of film, paper, or barrier coating is bonded to the surface of a molded fiber product to enhance properties such as moisture resistance, grease resistance, printability, or appearance.

Laminator

The equipment that adds a lamination film to the molded product.

Lignin

A complex polymer that binds cellulose fibers together in wood and other plants. It is often removed during the pulping process.



M

Mesh

A woven wire screen, typically made of stainless steel or copper, that covers the surface of a forming tool. It allows water to drain through while retaining pulp fibers, and its count (typically expressed in wires-per-inch) and wire diameter directly influence surface finish and drainage efficiency.

Micro Fibrillated Cellulose (MFC)

Cellulose fibers that have been mechanically processed into extremely fine fibrils at the micro or nano scale, used as an additive in molded fiber to enhance strength, barrier properties, and surface smoothness.

Modified Atmosphere Packaging (MAP) Tray

A type of thermoformed fiber tray designed to extend the shelf life of fresh food products.

Mold

A hollow form or matrix for giving a particular shape to a molten or plastic material.

Molded Fiber

A packaging material, also known as molded pulp, made from recycled paperboard, newsprint, or other cellulose fibers.

Molded Pulp

The official industry term for molded fiber.

N

Nesting

The ability of molded pulp products to be stacked together efficiently, reducing storage and transportation space.



O

Oil and Grease Resistance (OGR)

A functional property, often quantified using the TAPPI/Kit test, that measures a molded fiber product's ability to resist penetration by oils and greases, critical for food-service packaging applications.

Oil Heating

A mold heating method that uses thermal oil, typically heated by a gas-fired system, circulated through internal channels in the press tools to deliver uniform and controllable temperatures for drying and curing molded fiber products.

Oil Repellent

An additive or coating that prevents the absorption of oil or grease into the molded fiber product.

Old Corrugated Cardboard (OCC)

A widely available grade of recovered fiber consisting of used corrugated boxes, commonly repulped and used as a primary long-fiber raw material for molded fiber packaging.

Old Magazines (OMG)

A recovered paper grade consisting of used magazines, characterized by coated, short-fiber stock that can be incorporated into molded fiber furnishes to improve surface smoothness and formation.

Old Newsprint (ONP)

A recovered paper grade composed of used newspapers, commonly used as a low-cost recycled fiber source in molded fiber production, particularly for protective and industrial packaging.

Oven

An enclosed, heated chamber used to dry wet-formed molded fiber products by circulating hot air, removing moisture to achieve the required final solid content and dimensional stability.

Oxygen Barrier

A material property, typically achieved through coatings, films, or laminations, that limits the passage of oxygen through molded fiber packaging in order to preserve the freshness and shelf life of oxygen-sensitive products.

Oxygen Transmission Rate (OTR)

The measured rate at which oxygen gas permeates through a material under specified temperature and humidity conditions, used to evaluate the oxygen barrier performance of coated or laminated molded fiber packaging. Expressed in g/m²/day.

P

Packaging and Packaging Waste Regulation (PPWR)

A European Union regulation that sets harmonized requirements on packaging design, recyclability, recycled content, and waste reduction, directly influencing the specification of molded fiber packaging in the EU market.

Paper Trimmings

Clean scrap paper generated as offcuts during paper and converting manufacturing operations, used as a high-quality, uncontaminated recycled fiber source in molded fiber furnishes.

Per- and Polyfluoroalkyl Substances (PFAS)

A class of chemicals sometimes used to provide water and grease resistance, which are being phased out due to environmental and health concerns.

Post-Consumer Recycled (PCR)

Material recovered from products that have completed their consumer use, such as used packaging, and reprocessed into new molded fiber products to support circularity and recycled-content claims.

Press Tool

A heated mold used in a secondary pressing stage to compress and dry a wet-formed molded fiber product, improving its surface smoothness, dimensional stability, and mechanical strength. Press tools are typically made of aluminum and operate under controlled temperature and pressure.

Processed

A category of molded fiber products that have undergone secondary treatments such as printing, coating, or die-cutting.

Pulp

A lignocellulosic fibrous material prepared by chemically or mechanically separating cellulose fibers from wood, fiber crops, waste paper, or rags.

Pulp Injection

A newer molding technique where a pulp and starch paste is injected into a mold, allowing for more intricate designs.

Pulper

A large vessel equipped with a rotor that mixes raw fiber materials (such as waste paper, bagasse, or wood pulp) with water to break them down into a pulp slurry used for molded fiber production.



Q

Packaging and Packaging Waste Regulation (PPWR)

A European Union regulation that sets harmonized requirements on packaging design, recyclability, recycled content, and waste reduction, directly influencing the specification of molded fiber packaging in the EU market.



R

Recycled Fiber

Fiber that has been recovered from waste paper or other paper products and is used to make new molded pulp products.

Refiner

A mechanical device that processes pulp fibers between rotating discs or plates to modify their structure through fibrillation, improving fiber bonding, flexibility, and the overall strength of the finished molded fiber product.

Repulpability

The ability of a molded fiber product to be effectively broken down into individual fibers under standard recycling conditions, allowing the recovered pulp to be reused in new paper or molded fiber products.

Retention

A measurement to describe how much of all solids are retained in the forming step. Measured by dividing consistency of white water by the consistency of the forming vat.

Retention aid

A chemical designed to increase the retention, mainly to make sure all the non-fiber materials are also retained.

Rosin size

A sizing agent used to provide water resistance to molded fiber products.

S

Shrinkage Allowance (Tooling)

The percentage of dimensional compensation factored into the design parameters of a forming tool to account for the expected shrinkage of Type 1 and Type 2 products during drying, ensuring the finished product meets target dimensions. This allowance is largely influenced by fiber characteristics and dryer conditions.

Shrinkage Percentage (Product)

The percentage by which the dimensions of a finished molded fiber product have reduced relative to the original forming tool dimensions as a result of drying. This is primarily associated with Type 1 and Type 2 products, and tooling should be designed to compensate for this shrinkage.

Single-Use Plastic Fee (SUP Fee)

An environmental tax or levy applied to single-use plastic packaging in various jurisdictions, designed to discourage plastic use and encourage adoption of fiber-based alternatives such as molded fiber.

Sizing

The process of adding substances to the pulp to improve its resistance to water.

Slurry

A mixture of water and suspended pulp fibers that is the starting material for the molding process.

Slushing

The process of breaking down paper or recovered fiber into a pulp slurry by hydrating and mechanically dispersing it in water; slushing time varies with the freeness of the fiber being processed.

Solid Content

The amount of dry fiber in the pulp slurry, expressed as a percentage.

Sorted Office Paper (SOP)

A high-grade recovered paper category composed of sorted office papers, providing a clean, predominantly bleached short-fiber source for molded fiber furnishes requiring brightness and printability.

Stock

A prepared pulp slurry ready for the forming process.

T

Thermoformed Fiber

(Typically produced using the Type 3 Manufacturing Method)

A high-quality type of molded pulp with a smooth finish and thin walls, produced using a cure-in-the-mold process.

Thick-Wall

(Typically produced using the Type 1 Manufacturing Method)

A type of molded pulp with a rough surface and thick walls, typically used for protective packaging of heavy items.

Tooling

The molds and other equipment used in the molded fiber manufacturing process.

Transfer Distance

The critical gap, measured in millimeters, between the surface of the wet product on the forming tool and the mating surface of the transfer tool. This distance is often zero on Type 3 machines but typically ranges from 1–2 mm on conventional machines, and directly impacts transfer quality and product integrity.

Transfer Molded

(Typically produced using the Type 2 Manufacturing Method)

A common type of molded pulp with a relatively smooth surface, used for products like egg cartons and drink trays.

Transfer Tool

A mold component used to receive the wet, freshly formed fiber part from the forming tool and transfer it to the drying or hot-press stage, helping to maintain the product's shape and improving surface finish during production.

Trash Pump

A heavy-duty pump designed to transfer highly contaminated pulp stock containing debris such as plastics, rags, and metal fragments from the pulper to downstream screening and cleaning equipment.



U



V

Vacuum Forming

The process of using a vacuum to pull a pulp slurry onto a screen or mold.



W

Wall Thickness

The thickness of the walls of a molded fiber product, which varies depending on the product type and application.

Washing

A process in which water sprays are applied to the forming tools to clean residual pulp from the mold surfaces and to produce a smoother, cleaner edge finish on the molded product, reducing or eliminating the need for subsequent trimming.

Water Repellent

An additive or coating that prevents the absorption of water into the molded fiber product.

Water Vapor Transmission Rate (WVTR)

The measured rate at which water vapor permeates through a material under specified temperature and humidity conditions, used to evaluate the moisture barrier performance of coated or laminated molded fiber packaging. Expressed as $\text{g/m}^2/\text{day}$, measured under specific temperature and moisture conditions.

Wet Product

The freshly formed molded fiber product in its high-moisture state, typically containing 70–80% water, as it exits the forming tools and enters the press tools or drying oven. Handling and transferring the wet product carefully is critical to avoid deformation before pressing or drying.

Wheat Straw Fiber

A natural, non-wood fiber derived from the stalks remaining after wheat grain harvest, used as a renewable and agricultural-waste-based raw material for molded pulp packaging.

White Water

Recovered process water containing residual fine fibers and fillers, typically collected and returned to a process water tank for reuse in pulp preparation, reducing freshwater consumption and improving production efficiency.

Wood Pulp

Pulp made from wood fibers, a common raw material for molded fiber products.

X



Y



Z

