

USDA proposes to include in this category both biobased adhesives and items embodying those adhesives. Items using such adhesives include book bindings, envelopes, stamps, medical application such as tapes and alternatives to sutures, doors, windows, paper bonds, corrugated paper boxes, lumber, furniture, and more. Biobased pressure sensitive adhesives have been developed for clear tape, duct tape, masking tape, labels, and a variety of disposable items. Another example of biobased adhesives is soy-based products used to glue wood to form finger-jointed lumber, glulam beams, I-joists, and other engineered wood products.

Proposed Minimum Content—Adhesives Category

Adhesive products are to have a minimum biobased content of 70 percent by weight of the adhesive. Biobased adhesive additives may also be used to reduce the total amount of phenol-formaldehyde and isocyanate-containing adhesives used to bond plywood and other wood panels. These products and wood products made with these products are proposed to qualify when the additive is used to reduce total adhesive content of the finished product by at least 25 percent and when the minimum content of the additive is at least 70 percent biobased material. Finished products in which 90 percent of all of the adhesives used in production are biobased would be designated as biobased products.

Construction Materials and Composites Category

The Construction Material Subcategory (or item) includes product applications containing biobased adhesives, such as plywood and finger jointed lumber; oriented strand board, medium density fiberboard, and hardboard; engineered wood building components, e.g., laminated beams, trusses, finger jointed lumber, oriented strand lumber; moldings and trim; and decorative composites. Construction products include round wood; lumber; composites; and plastic-wood composite lumber and panels such as plywood, oriented strand board, medium density fiberboard, and hardboard that contains agricultural or wood-based materials.

The Composite Panels Subcategory (or item) is composed of nonstructural composite materials such as highly engineered blends of recycled paper products or agricultural wastes, biobased resins, and color additives can combine to provide a composite and composite panels. Product applications include furniture, tabletops, trim, store

fixtures, awards, plaques, trophies, indoor signs, and other interior or nonstructural uses. Composite panel products include panels made from straw or other agricultural residues.

Molded Reinforced Composites subcategory (or item) products, such as decorative trim, shingles, or siding, may be made from bioplastic resins used to bind inorganic fibers such as fiber glass or agricultural fibers such as kenaf. These resins may be made from a combination of biobased materials and may be reacted with petro-based chemicals to achieve functional properties.

The Insulating Foams and Films Subcategory (or item) includes biobased polyurethane made from a soybean oil polyol, poly-lactides made from cornstarch, polyesters made from vegetable oils, and other bioplastic materials. Hundreds of products can employ these materials ranging from carpet backing to foam cushions; pads for furniture; automotive seats and dashboards; molded cases and covers for appliances; telephones; computers; and rigid insulating foams used to insulate refrigerators, freezers, coolers, and appliances. Each use may have different biobased content requirements.

This item also includes bioplastic rigid and soft foam, used to produce such products as fiber and foam insulation. Starch mixtures such as aqua gels or vegetable compounds can be added to concrete mixture during setting to reduce the density of concrete, and concrete mold release agents from vegetable oils are available products.

The Mixed System Products Subcategory (or item) is composed of products where specific component parts are designated as biobased (such as carpets and carpet squares with backing, attached pad, or face material that is biobased) but other components of the products may be from another product subcategory (item) or be non-biobased. The minimum content requirement may be applied to the biobased component rather than the complete product. An example would be the replacement of a portion of petroleum-based urethane for carpet backing with a percentage of soybean oil-based urethane.

In use, these items may include a large percentage of inert fillers and extenders which are not counted in computing total product weight. When determining the percent biobased content, calculations should be made on the weight of the component less excluded materials, and not on the weight of the total product.

Proposed Minimum Content—Construction Materials and Composites Category

The minimum biobased content requirement may be based on the weight of the biobased component rather than the complete material. USDA is providing guidance on the more prevalent products. As subsequent regulations to designate items for preferred procurement continue to evolve, more content information will be forthcoming. USDA particularly welcomes comments on adding additional subcategories to this section to more clearly define content requirements. The minimum biobased content of each item in this category must be:

Items	Minimum biobased content (%)
Construction material	85
Composite panels	70
Molded reinforced composites ...	10
Insulating foams and films	15
Components of mixed system products	20

Fibers, Paper, and Packaging Category

There is a broad range of agricultural crops, forest biomass, and livestock that contributes materials to this category including non-tree sources such as bamboo, corn stover, low-grade cotton, flax, kenaf, cereal and grain straws, sugar cane bagasse, switch grass, leaves, and poultry feathers; and wood from forest thinnings, saw dust, flour, shavings, chips, grindings, and curls from trees.

Fibers from biobased sources can be used in the manufacture of product containers such as boxes, drums, and pails for the storage or shipment of food or manufactured products. Biobased fibers can also be used as bulk packaging materials for filler and protection of stored or transported goods. Natural biobased fibers are very ductile and typically do not splinter. Their properties have been compared to carbon and glass fibers for use in fiberglass composites.

Fiber composites are created when biobased fibers are blended with molten plastic in ratios of up to 70 percent fiber by weight to make furniture, toys, and other molded items.

Composite packaging materials use an emerging technology that relies on a mix of organic and inorganic materials, such as starch and limestone, and sometimes include fibers and coating materials that are also biodegradable. These materials often use starch from potatoes, corn, or