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Standard Terminology of Packaging and Distribution Environments[1]

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This standard has been approved for use by agencies of the U.S. Department of Defense.

INTRODUCTION

The terms and definitions in this standard are grouped into related areas under principal concepts. The broad descriptor term for each group is followed in alphabetical order by narrower terms and related terms. Cross-references are included where the concept group is not obvious.

1. Scope

1.1 This terminology is a compilation of definitions of technical terms used in the packaging and distribution environments. Terms that are generally understood or adequately found in other readily available sources are not included.

1.2 A definition is a single sentence with additional information included in discussions.

1.3 Definitions that are identical to those published by another standards organization or ASTM committee are identified with the name of the organization or ASTM committee.

1.4 The definitions in this terminology are grouped into related areas under principal concepts. The broad descriptor term for each group is followed in alphabetical order by narrower terms and related terms. Cross-references are included where the concept group is not obvious.

1.5 Terminology related to flexible barrier packaging is found in Terminology F17.

2. Referenced Documents

2.1 *ASTM Standards:*[2]

C717 Terminology of Building Seals and Sealants

D907 Terminology of Adhesives

D1596 Test Method for Dynamic Shock Cushioning Characteristics of Packaging Material

D3288 Test Methods for Magnet-Wire Enamels

E176 Terminology of Fire Standards

F17 Terminology Relating to Flexible Barrier Packaging

G15 Terminology Relating to Corrosion and Corrosion Testing (Withdrawn 2010)[3]

2.2 *Federal Standard:*

PPP-F-320 Fiberboard, Corrugated and Solid, Sheet Stock (Container Grade), and Cut Shapes[4]

2.3 *Other Standards:*

Uniform Freight Classification Rule 30[5]

National Motor Freight Classification[6]

3. Terminology

absorbent packing—See **packing** .

adhesive, *n*—a substance capable of holding materials together by surface attachment.

DISCUSSION—Adhesive is the general term and includes among others, cement, glue, mucilage, and paste. All of these terms are loosely used interchangeably. Various descriptive adjectives are applied to the term adhesive to indicate certain characteristics as follows: (*1*) Physical form, that is, liquid adhesive, tape adhesive, (*2*) Chemical type, that is, silicate adhesive, resin adhesive, (*3*) Materials bonded, that is, paper adhesive, metal-plastic adhesive, can label adhesive, and (*4*) Conditions of use, that is, hot-setting adhesive (D907, D14).

contact adhesive, n—an adhesive that is apparently dry to the touch and that will adhere to itself instantaneously upon contact; also called contact bond adhesive or dry bond adhesive (D907, D14).

aerosol package—See **package** .

[1] This terminology is under the jurisdiction of ASTM Committee D10 on Packaging and is the direct responsibility of Subcommittee D10.11 on Terminology (definitions).

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[2] For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

[3] The last approved version of this historical standard is referenced on www.astm.org.

[4] Available from Superintendent of Documents, US Government Printing Office, Washington, DC 20402.

[5] Available from Uniform Classification Committee, 222 South Riverside Plaza, Chicago, IL 60606.

[6] Available from National Classification Board, 2200 Mill Road, Alexandria, VA 22314.

ampoule, *n*—a hermetically sealed, small bulbous glass or plastic vessel. Opening is achieved by breaking the stem. (Also *ampule*or *ampul*.)

anchor, *v*—to secure firmly (*Webster*).

anti-skid plate—See **loading.**

available program, *n*—a qualifying term which can be used in the definition of recyclable, reusable, refillable, returnable, compostable, establishing limits; for example, by population and access within geographic area.

DISCUSSION—This term is an essential component of recyclable, reusable, refillable, returnable, and compostable. Manufacturers should refer to FTC Guidelines to ensure claims are not deceptive. Claims should be qualified with appropriate phrases such as the following:

"Recyclable where facilities exist. Check to see if recycling facilities exist in your community."

"Recyclable where facilities exist. Collection programs have been established in *x* % of the country. Check to determine if they exist in your community."

"Compostable in centralized facilities. Check to see if composting programs exist in your community."

"Compostable at home. May be composted in as part of your composting pile at home."

bag, *n*—a preformed **container** of tubular construction made of flexible material, generally enclosed on all sides except one forming an opening that may or may not be sealed after filling. (See also **pouch.**)

DISCUSSION—A bag may be made of any flexible material, or multiple plies of the same, or combination of various flexible materials. The term bag is used as a synonym for sack, but the term sack generally refers to the heavier duty or shipping sacks. It is made in various standard styles and may be open-mouth or valve type. The five basic standard types of bags are: (*1*) grocery bag, (*2*) merchandise paper, (*3*) industrial, (*4*) textile, and (*5*) paper shipping sack.

paper multiwall-sack—a flexible **container** made of several plies, usually of kraft paper. The various plies may be specially treated, such as waxed paper, glassine, greaseproof, polyethylene, **wet strength paper**, or other specialty sheets. The particular nature of the sack depends upon the material to be packed and the type of transportation to be employed.

bag liner—See **liner**.

bail, *n*—the usually arched handle of a pail or can.

bale, *n*—in packaging a shaped unit, bound with cord or metal ties under tension, and containing compressed articles or materials. It may be wrapped.

banding—Use **strapping** .

barrel, *n*—a bulged cylindrical **container** of greater length than breadth, made of wooden **staves** bound together with hoops and having two flat ends of equal diameter. (Compare **drum.**)

cask, n—a term used synonymously with **barrel** but usually of large size or capacity.

keg, n—a small slack or tight **barrel** of 30-gal capacity or less.

barrier material:—

grease-resistant barrier—a material that prevents or retards the transmission of grease or oils.

water-resistant barrier—a material that retards the transmission of liquid water.

water-vapor-resistant barrier—a material that retards the transmission of water vapor.

basket, *n*—a semirigid **container** usually open at the top and provided with one or two handles for carrying. (Compare **hamper**.)

DISCUSSION—A **basket** is sometimes made of thin strips of wood, woven or stapled, or otherwise bound together, or it may be made of fiberboard or combinations of wood and fiber, or plastic. (See **stave**.(*2*))

batten—See **box**.

biodegradable, *adj*—capable of undergoing decomposition into carbon dioxide, methane, water, inorganic compounds, or biomass in which the predominant mechanism is the enzymatic action of micro-organisms, that can be measured by standardized tests, in a specified period of time, reflecting available disposal conditions.

blister pack—See **pack.**

blocking—See **loading.**

body—See **container.**

bottle—See **container.**

bottom—See **box.**

box, *n*—a rigid **container** having closed faces and completely enclosing the contents. When this term is used in connection with fiberboard boxes, such fiber boxes must comply with all the requirements of the carrier rules. (See **carton.**)

bottom, n—the **face** of a **box** on which it usually rests while filling.

DISCUSSION—In terms of fiberboard shipping boxes, the face created by the flaps of regular (or similar style) slotted boxes are the top or bottom, regardless of loading or stacking.

box batten, n—a reinforcing member, (*1*) for a **wood box** internally or externally applied to the sides, top and bottoms. When applied externally it should be applied in pairs; (*2*) in a **wirebound box,** a batten is a reinforcement used on the ends of the container only.

cleated fiberboard box—a rigid **container** having five or six **panel faces** with wood strips fastened to them, the panels being made of **solid** or **corrugated fiberboard.**

cleated plywood box—a rigid **container** having five or six **panel faces** with wood strips fastened to them, the panels being made of plywood.

flange, n—in **fiberboard boxes,** an extension to a panel similar to a short flap that may be folded in or out, usually at angles of 90 or 180° to the panel.

nailed wood box—a rigid **container** constructed of wood in several standard styles, assembled by fastening sides, top and bottom to the ends with nails or other suitable fasteners.

skid box—a metal, wooden, or fiber **box** fastened to a platform raised on skid members or legs; it may or may not be collapsible. (See also **skid.**)

wirebound box—a rigid **container** whose sides, top, and bottom are of rotary-cut lumber, sliced lumber, **resawn lumber, fiberboard,** or combinations thereof, usually ⅜ in. (9.5 mm) or less in thickness, fastened to **cleats** and to each

other by means of binding wires and staples; and ends of similar material, plain or stapled to **battens** or **liners,** fastened in place by means of nails or staples or wires stapled thereto.

DISCUSSION—The **closure** is made by twisting or looping together the ends of the binding wires.

boxboard—See **paperboard.**

bracing—See **loading.**

bubble packaging material—a material consisting of a flexible plastic film having uniformly spaced bubbles integrally molded therein.

DISCUSSION—These bubbles may or may not be permanently affixed to a separate backing film to either seal the air within the bubbles or to add dimensional stability to the structure. Bubble packaging is primarily used as a cushioning material.

buffer, *n*—a material or device, such as folded up **corrugated fiberboard,** placed in a container to position and protect the contents from the forces of impact.

DISCUSSION—A **buffer** is usually made of a cushioning, or compressible material. It may be made in a variety of styles such as spring buffer, rolled-up buffer, die-cut, and so forth. (See **cushioning material.**)

bulk packaging—see **packaging.**

bundle, *n*—two or more articles held together with rope, wire, or **strapping** so as to form a shipping unit; it may be wrapped.

bung hole—*in packaging,* an opening in a **barrel** or **drum** through which material can be poured to fill, empty or vent.

bursting strength—See **package testing**.

bursting strength test—See **package testing**.

caliper—See **package testing.**

can, *n—in packaging,* a receptacle generally of 10-gal capacity or less, normally not used as a **shipping container.**

DISCUSSION—The body is made of lightweight metal or is a composite of paperboard and other materials having the ends made of paperboard, metal, plastic, or a combination thereof.

Cady test—See **package testing.**

cap—See **container (cover).**

carboy, *n*—a **container** made of glass, ceramic, plastic, or metal, having a capacity of 5 to 15 gal (19 to 57 L) with the pouring and filling opening at the top.

DISCUSSION—For shipment, carboys are generally encased in a protective rigid outer container.

carton, *n*—a folding **box,** generally made from **boxboard** for merchandising consumer quantities of products (for example, shelf packages or prime packages).

case—See **container.**

case liner—See **liner.**

cask—See **barrel.**

child-resistant packaging—See **packaging.**

chime (chine), *n—in packaging,* the rim of a **container,** such as a **drum, barrel,** or **can.**

chipboard—See **paperboard.**

cleat, *n*—a wood or metal strip attached along the edge of a **panel** of a **container** for the attaching of an adjacent panel, or fastened to the panel between the edges, or to barrel heads, for reinforcement and stiffening.

cleated fiberboard box—See **box.**

cleated plywood box—See **box.**

closure, *n—in packaging,* a means of closing a **container** to retain the contents.

plug, n—in packaging, a type of **closure** that is designed to be inserted into a **container** opening. It may be held by friction or by screw threads. (See **cap.**)

cocoon, *v—in packaging,* to employ strippable, usually plastic, sometimes multi-layered films to encapsulate an item.

code, *v*—to assign numbers, letters, words, or symbols as identifying marks to **containers,** packaged materials, or articles to convey information concerning the qualities of the container or its contents, date, place of manufacture, or other significant identification. (Compare **marking.**)

collapsible tube—See **tube.**

compaction ratio, *n*—the measurement of the relationship of volume displacement of a package before and after simulated landfill conditions as determined in standardized tests.

composite tube—See **tube.**

compostable, *adj*—capable of undergoing biological decomposition in a compost site as part of an available program, such that the material (that is, feedstock) is not visually distinquishable and breaks down to carbon dioxide, water, inorganic compounds, and biomass, at a rate consistent with known compostable materials.

DISCUSSION—See **available program** for further clarification. Also, manufacturers should indicate if composting at home or centralized facility is appropriate.

Conbur test—See **package testing.**

constant load—See **load.**

contact adhesive—see **adhesive** .

container—a nonspecific term for a receptacle capable of **closure** (See also: **bag, barrel, basket, box, can, carton, crate, cylinder, drum, envelope, hamper, pail, tube.**)

body, n—in packaging, the principal part of a **container,** usually the largest part in one piece containing the sides.

bottle, n—a rigid or semirigid **container** typically of glass or plastic, having a comparatively narrow neck or mouth, and usually no handle (*Webster*).

case, n—a nonspecific term for a **shipping container.** In domestic commerce, case usually refers to a box made from **corrugated** or **solid fiberboard** wood, or metal.

cover, n—in packaging, the top or bottom, or both of a **container,** usually the part that closes the filling and dispensing opening. It is often called a cap when used with **fiberboard containers.** (See also **shroud.**)

cylinder, n—a rigid cylindrical metal **container** designed as a portable vessel for the storage and transportation of compressed gases. Generally equipped with protected valve closure and suitable pressure-relief safety device.

die-cut, adj—(*1*) a method of preparation in which a part or **container** has been cut, slotted, and scored or any combination of these by custom-made dies; (*2*) *n*, a part so made.

expendable container—a **container** for shipping or storage, or both, intended primarily for a single trip.

face, n—in packaging, any one of the plane surfaces of a **container.**

fast pack container—a standard size, **reusable container** with foam cushion **inserts.**

DISCUSSION—Some designs permit shipment of a large variety of items within certain limits of size, weight, configuration, and fragility.

fiberboard container—a **box, package,** or **drum** made of **fiberboard.** When the term box is used for classification purposes, the structure must comply with all requirements of the carrier rules.

flap, n—one of the closing members of a **fiberboard container.**

glass container—any glass receptacle capable of holding a **seal** or **closure** for retention of contents.

intermodal container—a reusable **shipping container** manufactured to standard dimensions intended to unitize cargo or freight for shipping by one or more modes of transportation without the need for intermediate handling of the contents.

jar, n—a widemouthed container made typically of glass, plastic, or earthenware.

jug, n—a large, deep, usually glass, plastic, or earthenware container with a narrow mouth and a handle.

manufacturer's joint—that part of a **fiberboard container** where the ends of the box blank are joined together in the manufacturing process by taping, stitching, or gluing.

modular container—a family of **containers** designed to be assembled into a **unit load.**

returnable container—a **shipping container** of any material designed to be used for more than one shipment.

reusable container—a shipping and storage **container** designed for reuse without impairment of its protective function.

DISCUSSION—It may be repaired or refitted to prolong its life, or to adapt it for items other than originally intended.

seam, n (when referring to a **fiberboard container***)*—the lines of junction created by any free edge of a container flap or wall where it abuts or overlaps another portion of the **container** (except the **manufacturer's joint**).

DISCUSSION—A seam may be fastened by tape, stitches, or adhesive in the process of closing a fiberboard container.

shipping container—a container that is sufficiently strong to be used in commerce for **packing,** storing, and shipping commodities. (See also **barrel, crate, drum.**)

containerboard—any **paperboard** made specifically for the manufacture of **corrugated** and **solid fiberboard shipping containers.** Basis weight is expressed in pounds per 1000 ft^2 (or grams per square metre). It is customarily shipped in rolls.

cylinder kraft—**containerboard** made from kraft pulp on a cylinder machine.

Fourdrinier kraft—**containerboard** made from kraft pulp on a Fourdrinier machine, basically of single-ply formation, although possibly with supplementary second-ply, with less prominent grain direction. The sheet is formed on a traveling endless-wire screen which may also be vibrated to obtain more random orientation of fibers.

solid fiberboard—a solid board made by laminating two or more plies of **containerboard**.

containerization, *n*—(*1*) a shipping method in which material (such as merchandise) is packaged together in one **container**.(*2*) the use of transport **containers** to unitize cargo for transportation, supply, and storage.

core, *n—in packaging,* a cylindrical structure used as a carrier of flexible material that is wound around it.

corrosion, *n*—the chemical or electrochemical reaction between a material, usually a metal, and its environment that produces a deterioration of the material and its properties (G15, G01).

corrosion, inhibitor, n—a chemical substance or combination of substances that, when present in the proper concentration and form in the environment, prevents or reduces corrosion.

volatile corrosion inhibitor (VCI)—a material that slowly releases vapor to inhibit corrosion within a **package** by neutralizing the effects of moisture-laden air.

corrugated box—See **box**.

corrugated fiberboard:

(1) single face—the structure formed by one corrugated member glued to the flat facing;

(2) single wall—the structure formed by one corrugated inner member glued between two flat facings; also known as double face;

(3) double wall—the structure formed by three flat facings and two intermediate corrugated members;

(4) triple wall—the structure formed by four flat facings and three intermediate corrugated members. (See also **containerboard**.)

corrugating medium—**paperboard** used in forming the fluted portion of the **corrugated board**.

corrugation flute—one of the wave shapes formed in the inner member, that is, the corrugating medium, of corrugated fiberboard. Flutes most commonly used are:

	Number, per Linear ft	Span Between Adjacent Flutes, mm	Height, in. (mm)[A,B]
A-flute	36 ± 3	7.9 to 9.1	3/16 (4.7)
B-flute	50 ± 3	4.7 to 6.6	3/32 (2.4)
C-flute	42 ± 3	6.8 to 7.8	9/64 (3.6)
E-flute	94 ± 4	3.0 to 3.5	3/64 (1.2)

[A] The values are approximate.
[B] Height does not include thickness of facing.

V-board—a term adopted from the grade symbol of **corrugated** or **solid fiberboard** made to comply with the weather-resistant class as defined in Federal Specification PPP-F-320, made of wet strength **paperboard**. Components are especially made to exhibit high strength (against bursting, tearing, or rupturing) when wet.

W-board—same as V-board except the "W" grades are of lower test requirements and primarily for use as interior or intermediate containers.

cover—See **container**.

crate, *n*—a rigid **shipping container** of framed construction joined together with nails, bolts or any equivalent method of fastening. The framework may or may not be enclosed with sheathing. It may be demountable (reusable) or nondemountable. (See also **rubbing strip, strut.**)

open crate—a **crate** with exposed frame members and not enclosed by **sheathing.**

sheathed crate—a **crate** that is enclosed by having the frame members completely covered with **sheathing** boards or material.

creped duplex paper—See **paper** .

creped paper—See **paper.**

critical transponder distance, *n*—the distance between the transponder and the interrogator antenna at which a transponder becomes undetectable by an RFID system, when moving the RFID transponder out of the read field.

cube, *n—in packaging,* the volume of space occupied by the unit under consideration, computed by multiplying overall exterior length, width, and height. For shipping purposes cube is expressed to the nearest 0.1 ft^3 (2830 cm^3). (Compare **displacement**.)

cushion, *v*—to use **cushioning material** to reduce shock and vibration transmitted to a packaged product from an externally applied force.

cushioning material—a material used to isolate or reduce the effect of externally applied shock or vibration forces, or both. (See also **buffer, divider, molded shape.**)

creped cellulose wadding—a material consisting of cellulose fibers produced by the sulfite process, loosely matted into sheet form and then creped. It is available in single or multiple sheet form, either plain or embossed, and may be backed with various papers. It is also available impregnated with asphalt for water resistance.

filler pad—in packaging, a **pad** used to fill space; sometimes applied to a soft flexible pad made with various loose filling materials to provide cushioning effects. (Compare **buffer**.)

foam-in-place cushioning material, n—one formed by dispensing, usually into a box or mold, reactive chemical components that expand to envelop items packaged or occupy void areas.

macerated paper—generally, waste paper torn up mechanically for use as a **cushioning material.**

cylinder—See **container**.

cylinder kraft—See **containerboard** .

dead load—See **load**.

density, *n*—mass per unit volume (D3288, D09).

desiccant, *n*—a hygroscopic substance used to absorb water vapor from the air to maintain a low relative humidity in a container.

diagonal bracing—See **loading.**

die cut—See **container.**

dimensions, *n—in packaging,* the measurement of length, width (or diameter), and depth of **containers,** expressed in that order; it should be stated as "inside" or "outside."

DISCUSSION—For fiberboard and most other types of boxes, length is the larger of the two dimensions of the open face, width is the lesser of the two dimensions of the open face, depth is the distance between the innermost surfaces of the box measured perpendicular to the length and width, and are given as inside dimensions.

direct line of sight, *n*—an unobstructed visible path from one object to another.

displacement, *n— in packaging,* the volume occupied by a **container,** calculated from its outside dimensions. (Compare **cube.**)

divider, *n*—a device, made of various materials, that separates the space within a **container** into two or more spaces, cells, compartments, or layers.

DISCUSSION—A divider may be plain, interlocking, scored, horizontal, vertical, or diagonal. The primary purpose of a divider is to separate the articles, or to furnish cushioning, or both. Also, it frequently adds stacking strength (Compare **buffer, fiberboard partition, liner, pad, separator, spacer.**)

dolly, *n*—a low platform or structure mounted on wheels or casters, designed primarily for moving bulky loads for short distances. (Compare **pallet.**)

drop test—See **package testing.**

drum, *n*—(*1*) a cylindrical **shipping container** having straight sides, and flat, convex or embossed ends, designed for storage and shipment as an unsupported outer package that may be shipped without boxing or crating. It may be made of metal, or of plywood, or of fiber with wooden, metal or fiber ends. Drums are also made of rubber or plastics (Compare **barrel.**); (*2*) in set-up paper boxes, a shell or tube with paper or cellophane head, used for powder box. (See **divider.**)

dunnage—See **loading.**

dynamic load—See **load.**

edge protector—See **loading.**

Elmendorf test—See **package testing.**

end-grain nailing—nailing in such a way that the point of the nail follows the grain of the wood so that the shank is parallel, or nearly parallel to the grain in that member holding the nail point. It is weaker than side-grain nailing in direct withdrawal.

envelope, *n—in packaging,* a container of flexible material having only two **faces** and joined at three edges to form a partial enclosure. The nonjoined edge provides a filling opening which later may be closed or sealed.

equivalent product, *n*—provides the same amount of product or number of recommended uses as contained in the package being replaced (as related to Subcommittee D10.46 package source reduction).

expendable container—See **container**.

expendable pallet—See **pallet** .

exterior pack—See **pack**.

face—See **container**.

facing, *n*—a form of *linerboard* used as a flat member of **corrugated fiberboard** (sometimes erroneously called a **liner**).

fastener, *n—in packaging,* a device that serves to secure one part to another; for example, nail, screw, **staple, strapping, stitch**, or adhesive.

fast pack container—See **container** .

fiberboard—See **containerboard** .

fiberboard container—See **container**.

fiberboard partitions—a set of **corrugated** or **solid fiberboard** or **paperboard** pieces slotted so they will interlock when assembled to form a number of cells into which articles may be placed for shipment. (See also **divider**.)

fiberboard tube—See **tube**.

filler pad—See **cushioning material**.

finish, *n*—See **paperboard** .

fire-retardant, *adj*—having or providing comparatively low flammability or flame spread properties (E176, E05).

firmware, *n*—a series of programmable instructions, stored in read only memory (ROM), which controls the capabilities of an interrogator.

flange, *n*—See **box**.

flat—See **container**.

floating controlled load—See **load.**

flute—See **corrugated fiberboard.**

foam-in place cushioning material—See **cushioning material.**

Fourdrinier kraft—See **containerboard.**

friction, *n*—resistance to relative motion between two bodies in contact (*Websters*).

coefficient of friction—the ratio of the force required to move one surface over another, to the total force applied normal to those surfaces.

kinetic coefficient of friction—the ratio of the force required to move one surface over another, to the total force applied normal to those surfaces, once that motion is in progress.

static coefficient of friction—the ratio of the force required to move one surface over another, to the total force applied normal to those surfaces, at the instant motion starts.

G—symbol for the dimensionless ratio between an acceleration in length per time-squared units, and the acceleration of gravity in the same units (D1596).

g—symbol for the acceleration of gravity at the earth's surface.

DISCUSSION—Its value differs slightly at different points on the earth, but the standardized value of 32.2 ft/s^2 or 9.806 m/s^2 is usually used.

glass container—See **container.**

grease-resistant barrier—See **barrier material.**

gummed paper tape—See **tape.**

hamper, *n*—a **container** (commonly used for shipping fruits and vegetables) circular, elliptical, or polygonal in horizontal cross section, the tube dimensions being usually greater than the bottom. It has slotted sides and a bottom that may be loose, stapled, or nailed in place. The top may or may not be open. (Compare **basket**.)

heat seal—See **seal.**

hermetic seal—See **seal.**

humidity indicator—an instrument or device that displays the approximate humidity condition within a **package.**

ID—inside dimensions or inside diameter.

incline impact (Conbur) test—See **package testing.**

inner packing—See **packing.**

insert, *n*—usually a thin filler or frame of wood, **fiberboard,** plastic, or other suitable material used to take up space, or separate articles within a **package.** (Compare **buffer, divider, separator.**)

interior packing—See **packing.**

intermediate pack—See **pack.**

intermediate package—See **package.**

intermodal container—See **container.**

keg—See **barrel.**

kraft, *n*—See **paperboard.**

label, *n*—a piece of paper or other material to be affixed to a container or article, on which is printed a legend, information concerning the product, or addresses. It may also be printed directly on the container. (Compare **tag.**)

liner, *n—in packaging,* (*1*) generally, any linear material that separates a product within a **container** from the basic walls of the **container,** (*2*) in **fiberboard containers,** a creased fiberboard sheet inserted in a container and usually fitting against the side and end panels (*liner* is sometimes erroneously used for *linerboard* or **facing**). (Compare **divider.**)

case liner (bag liner)—a lining, usually paper, or treated materials placed inside a shipping container for the purpose of preventing sifting, or entrance of moisture, dust, or dirt.

linerboard—See **paperboard.**

live load—See **load.**

load, *n*—(*1*) the force in weight units applied to a body; (*2*) the weight of the contents of a **container** or transportation device; (*3*) a qualitative term denoting the contents of a container.

constant load, n—a load that is invariable or unchanging.

dead load, n—a constant load that, in structures (as a bridge, building, or machines) is due to the weight of the members, the supporting structure, and permanent attachments or accessories (*Webster*).

dynamic load, n—an imposed force in motion; that is, one that may vary in magnitude, sense, and direction.

floating load—(*1*) a shipment, usually a *unitized load* (or loads), or a large individual article, so prepared that it may move in the carrying vehicle, the movement being restricted or retarded by friction between the load and the vehicle; (*2*) a method of packing in which the contents of the **container** are supported within the container by **cushioning** devices or **materials**; (*3*) *floating controlled load*—a **floating load** within a vehicle in which the movement is retarded, snubbed, or restrained by suitable devices.

live load, n—a moving load on a structure.

palletized load—a load made up of articles, loose or in **containers** placed on **pallets** or skids.

palletized unit load—a unitized **load** fixed to a pallet.

static load, n—an imposed stationary force, constant in magnitude, sense and direction.

unitized load—in packaging, a type of unit load consisting of articles or containers secured together so as to be handled as an entity.

unit load—in distribution, an item or assembly of items assembled or restrained for handling and transportation as a single entity.

loading, *n*—the act of placing a load on or in; to load a car, a vessel, or a test specimen. (See also **unitization.**)

anti-skid plate—a device, generally metal, about 4 by 6 in. (100 by 150 mm), with sharp projections on each face, placed under, against, or between containers and car floor, to retard shifting of load in transit.

blocking, n—material used to prevent or control movement of the unit or *load* or to facilitate handling (A700, A-1).

bracing, n—material or devices used to hold articles or sections of loads in position and prevent shifting within a transportation vehicle or within a **container.** (See **molded shape, strapping.**)

diagonal bracing—(*1*) a member reaching at an angle from a gate or other structure to the wall or floor of a freight car or truck to strengthen and reinforce the gate or structure; (*2*) a member, single or multiple, of a **crate** or **box** attached diagonally or at an angle to add reinforcement to the container.

dunnage, n—(*1*) in a carrying vehicle, the temporary **blocking,** flooring or lining, racks, standards, strips, stakes, or similar **bracing,** or supports not constituting a part of the carrying vehicle, used to protect and make freight secure in, or on a carrying vehicle (Classification, Rule 30);[5] (*2*) in a **container,** materials not constituting a part of the container, frequently by-product or scrap, used for filling space, for **blocking** or **bracing,** or otherwise to protect and secure the contents.

dynamic compression loading—in packaging, the application of a force in motion that usually occurs in 10 s or less.

DISCUSSION—These forces result most often from random impacts, vibration, or shocks in handling and transit.

edge protector—a right-angle piece placed over the edge of **boxes, crates, bundles** and gates, or **bracing** to distribute the pressure from metal bands or ties in order to prevent cutting.

spreader, n—(*1*) a horizontal wooden member placed between two gates in a car to hold the gates in position against the load; (*2*) a rigid device placed between sling legs, lifting cables, or ropes to prevent them from damaging cargo being loaded or unloaded.

static compression loading—in packaging, the application of a force for an extended period, often days, weeks, or months.

DISCUSSION—These forces usually are associated with stacked loads. Many factors, such as material fatigue, environmental conditions, and handling affect the rate and duration of loading.

load limit—(*1*) the maximum force, in weight units, a body can withstand without damage; (*2*) the greatest allowable weight that may be placed in a **container** or vehicle. For containers, load limit is often expressed in terms of the gross weight of the container and its contents.

load type, *n*—a qualitative description of the contents of a **container** with respect to **density,** fragility, and degree of **blocking, bracing,** and **cushioning** necessary. Load types are further divided into the following categories:

Type I load (easy)—a qualitative term denoting contents of low or moderate **density** conforming to the shape of the **container** and lending support to all faces of the container.

Type II load (average)—a qualitative term denoting contents of low or moderate density providing, when packed directly into a **shipping container,** nonshifting support at several points on the face of the container.

Type III load (difficult)—a qualitative term denoting contents characterized by irregular shape not lending support to the container, or by great density or extreme fragility.

lumber, *n*—the product of the saw and planing wood mill, not further manufactured than by sawing, resawing, planing, crosscutting to length, and matching.

matched lumber—**lumber** that is shaped to make a close-tongued and grooved joint at its edges or ends

plank, n—a broad board usually more than 1 in. thick, laid with its wide dimension horizontal, and used as a bearing surface.

resawn lumber—rough or surfaced **lumber** that has been divided into two or more thicknesses by sawing.

rough lumber—undressed **lumber** as it comes from the saw.

shiplapped lumber—**lumber** that is shaped at its edges to make a close-rabbeted, or lapped joint.

surfaced lumber—**lumber** that is dressed on one or more faces.

macerated paper—See **cushioning material.**

mailing tube—See **tube.**

manufacturer's joint—See **container.**

marking, *n—in packaging*, the application of numbers, letters, **labels, tags,** symbols or colors to provide identification and to expedite handling during shipment and storage. (Compare **code.**)

matched lumber—See **lumber.**

modular container—See **container.**

molded pulp—See **packaging.**

molded shape—*in packaging,* a material formed to specific contours for **cushioning,** or **blocking** or **bracing** purposes.

Mullen test—See **package testing.**

nest, *n*—a group of articles, **cans, baskets,** or **boxes** of various sizes, that fit one within the other.

OD—the outside dimension of a **package** or part, or outside diameter of a cylindrical container or wire or rod.

open crate—See **crate.**

overpacking, *n*—(*1*) **packaging** that exceeds minimum requirements, (*2*) additional packaging used to increase protection.

pack, *n*—the final configuration of material with necessary protection afforded for the distribution system.

blister pack, n—encapsulation of an item inside a preformed semi-rigid transparent, or opaque plastic bubble that is affixed to a semi-rigid backing.

exterior pack—a **container, bundle**, or assembly that is sufficient by reason of material, design, and construction to protect its contents during shipment or storage.

intermediate pack—in packaging, a **wrap**, **box**, or **bundle** that contains two or more unit packs of identical items, and that is in turn enclosed by an outer **shipping container**.

pack, *v*—to place material into a container for handling, storage, and transportation.

package—(*1*) *n*, a container providing means of protection and handling to a product; (*2*) *v*, to design, manufacture, or provide protection to a product; (*3*) *when referring to a fiber container*, a container not necessarily complying with all the requirements for a "box" in accordance with the *Uniform Freight Classification* and *National Motor Freight Classification*; (*4*) when referring to a fiber container, one of the special authorized containers described in detail in the Classifications in the section titled "Authorized Packages or Shipping Containers," of the above Freight Classifications.

aerosol package— a package that contains in addition to its contents, a gas under pressure. It is fitted with a valve which enables the contents to be dispensed.

consumer package—a primary container (which may be enclosed in a secondary container) designed to contain, store, and protect from the point of manufacture to the point of use, a product intended for household or individual use. (See *unit package* under **package** .)

DISCUSSION—The primary or secondary container may also be used as the shipping container and it may be used to communicate information relative to the product or its use.

industrial package, n—a package used for the transportation or storage of commodities, the contents of which are not meant for retail sale without being repackaged.

intermediate package—a wrap, box, or bundle (that is, a container) that contains two or more unit packages of identical items (also called a *secondary package*).

primary package—a container in direct contact with and enclosing the product along with any required protective material(s).

DISCUSSION—A primary package may be used as a shipping container and may convey information about the contents. (See *unit package* and *consumer package*.

secondary package, n—a container enclosing one or more primary packages along with any required protective material(s).

DISCUSSION—A secondary package my be used as a shipping container and may convey information about the contents. (See *intermediate package*.

unit package—the first tie, wrap, or container applied to a single item, a quantity of the same item, a set, or an item with all its component parts, that constitutes a complete and identifiable package containing the unit of issue of a product for ultimate use (also called a *primary package*).

package material, *n*—each separate and distinct material which by itself or in combination with other materials, forms a package component.

DISCUSSION—Some examples of package material are polyethylene film, polythylene foam, kraft paper, aluminum film, and paper/poly/foil laminate.

package source reduction, *n*—the reduction of the weight or volume of the packaging materials used in a package containing an equivalent product.

package testing:—

bursting strength—the strength of a material in pounds-force per square inch (or kilopascals), measured by the Cady or Mullen tester. (See **Cady test,** and **Mullen test.**)

bursting strength test—a test for measuring the resistance of a material to bursting measured in pounds per square inch (or kilopascals). (See **Mullen tester.**)

Cady test—a test for **bursting strength** made on a specific type of machine.

caliper—(*1*) *n*, thickness (as related to **paperboard**) of a sheet measured under specified procedures expressed in thousandths of an inch (or millimetres). Thousandths of an inch are sometimes termed "points"; (*2*) *n*, the precision instrument used in the paperboard industry to measure thickness; (*3*) *v*, to measure with a caliper.

compression test—a test for measuring resistance to external compressive forces. (See **loading.**)

drop test—a test for measuring the durability of an article, or the protection, or the retention properties of a container, or all three by subjecting the packaged product to a free fall from predetermined heights onto a surface with prescribed characteristics.

Elmendorf test—a test for measuring the tearing resistance of tape, paperboard, or other materials.

incline impact (Conbur) test—a test for determining principally the resistance of a packaged product to damage from impacts.

Mullen test—a test for bursting strength made on a specific type of machine.

puncture test—(*1*) a test for measuring the resistance of board to puncture; (*2*) the strength of a material, primarily involving tear and stiffness, expressed in units as measured by the puncture tester.

DISCUSSION—1 unit = 0.265 in.·lbf (0.0298 J) of energy.

revolving drum test—a test for measuring the protection to contents, or the retention properties of a container, or both, by subjecting the packaged products to rough handling in a standard revolving drum.

testing machine compression—in package testing, an imposed force in motion applied at a predetermined rate and condition until a predetermined end point is achieved.

packaging, *n*—(*1*) the technique of preparing goods for distribution;

(*2*) the design criteria, processes, and procedures used to protect material from deterioration and damage from the time manufacturing is completed until ultimate use or disposal;

DISCUSSION—It includes cleaning, drying, preserving, packing, unitization, and marking.

(*3*) the processes and procedures used to protect an item in a unit package.

bulk packaging—(*1*) a method of containing loose or granular materials for shipping or storage, (*2*) a method of assembling many items into a **container** for shipment or storage.

child-resistant packaging—packaging designed or constructed to be significantly difficult for most children under 5 years of age to open, or to obtain a toxic or harmful amount of the contents within a reasonable time; and not difficult for normal adults to use properly.

commercial packaging—the methods and materials used by a supplier to satisfy the requirements of the distribution system.

DISCUSSION—Commercial packaging includes industrial packaging, and consumer packaging; and may be applicable for certain levels of military packaging.

foam-in-place packaging—See **cushioning material.**

industrial packaging—packaging of partially manufactured or finished goods for distribution from manufacturer to manufacturer, and to users other than retail customers.

molded pulp—a type of **packaging** which has been formed from wet paper pulp to predetermined shape to generally fit one or more individual items. Used as apple trays, egg flats, egg carton. (See **molded shape.**)

skin packaging—a process whereby a product placed on a backing material is covered by a closely fitting thermoplastic film bonded to the backing material.

DISCUSSION—The article usually is placed on a porous, rigid backing sheet, heated film is draped over it, and vacuum is applied to draw the film tightly over the article.

vacuum packaging—the technique of **packaging** in **containers** from which substantially all air has been removed prior to sealing.

packaging sustainability, *n—in packaging*, a package design feature resulting from an assessment of the short-term and long-term environmental, social and economic impacts of design considerations, and of the entire package life, from manufacturing and production, storage, distribution, use and through end-of-life actions: it does not include the product itself.

DISCUSSION—Sustainability of a package, packaging material or packaging system is the result of deliberate consideration, analysis and trade-offs between the following factors, evaluated over the entire life of the package, from manufacturing and production, storage and distribution, use/reuse, and through end-of-life actions:

Performance requirements;
Cost or economic considerations;
Reduced weight and volume;
Reduced waste;
Reduced use of resources, including materials and energy sources;
Minimized or eliminated greenhouse gases;
Minimized or eliminated substances of concern;
Minimized adverse impact on individuals, communities, the environment, and on future generations;
Use of recycled content, or other environmentally low-impact materials, production methods, and energy sources;
Optimized packaging design for reuse, recyclability, reclamation, or other end-of-life scenarios;
Social considerations;
Legal or regulatory requirements.

Sustainable packaging, as a claim, is only applicable in the context of a producer's or user's overall corporate responsibility relative to any corporate sustainability program. The sustainability aspects of a package design must be considered with product design, transportation/distribution efficiencies, end-use considerations, and other initiatives or programs in determining overall product performance.

packing, *n*—the selection or construction of the **shipping container** and assembling of items or **packages** therein, including any necessary **blocking, bracing,** or **cushioning,** weatherproofing, exterior **strapping,** and **marking** of shipping container for identification of contents. (Compare **packaging**).

absorbent packing, n —a material included within a **package** to soak up liquids resulting from leakage or liquefaction of contents.

interior (inner) packing—material or parts used in supporting, positioning, or cushioning an item in its outer shipping container. (See also **buffer, cushioning material, divider, liner, separator.**)

saddle, n—a form of **interior packing** shaped to fit the article in order to increase the area of contact between the **blocking** and the article.

shell, (when referring to a *fiberboard packaging), n*—a specific form of inner **packing** consisting of a sheet of **corrugated** or **solid fiberboard** scored and folded to form a joined or unjoined **tube** open at both ends.

pad, *n*—(when referring to a **fiberboard container**) a **corrugated** or **solid fiberboard** sheet or other authorized material used for extra protection or for separating tiers or layers of articles when packed for shipment. (Compare **buffer, divider, separator**). See **cushioning material.**

pail, *n*—a **container,** usually cylindrical, with a handle, available in sizes of about 1 to 12 gal (3 to 50 L).

pallet, *n*—horizontal platform device used as a base for assembling, storing, handling, and transporting materials and products in a unit load. (Compare **skid, dolly.**)

expendable pallet—a **pallet** intended to be discarded after a single use.

reusable pallet—a **pallet** intended for more than one shipment (reusable for economic life).

stringer, n—a wooden member to which the face or faces of a **pallet** or the deck of a platform are fastened and running at right angles to the members making up the face or the deck.

palletized load—See **load.**

palletized unit load—See **load.**

panel, n—(*1*) a **face** or *side* of a **box** or **crate,** (*2*) any flat area between folds, or edges of a **box, carton,** or interior part.

paper:—

creped duplex paper—a double sheet composed of two layers of **creped paper** united with asphalt, latex, or other adhesives, generally with 20, 25, or 30-lb paper and 20, 25, or 30 lb of laminating material.

creped paper—paper, usually **kraft** (bleached sulfate) in various basis weights, that has been machined to resemble crepe and thus has stretch. It is used for wrapping purposes and for bag and barrel **liners.**

water-resistant paper—paper that is treated by the addition of materials to provide a degree of resistance to damage or deterioration by water in liquid form.

wet-strength paper—paper that has been treated with chemical additives to aid in the retention of resistance to bursting, tearing, or rupturing when wet.

paperboard, *n*—one of the two broad subdivisions of paper (general term, the other being paper as specific term). Paperboard is, in general, heavier and thicker than paper and is constructed primarily for strength properties such as stiffness, tearing resistance and the like. Sheets with thickness greater than 0.010 in. (0.25 mm) (with some exceptions) fall in this class. (See also **containerboard.**)

DISCUSSION—The broad classes of paperboard are (*1*) **containerboard,** (*2*) **boxboard,** and (*3*) other special types.

boxboard, n—a general term designating the grades of **paperboard** used for fabrication of folding and set-up **boxes (cartons).** Customarily shipped in sheets.

chipboard, n—a **paperboard** generally made from reclaimed paper stock.

DISCUSSION—It is used for many purposes, including facings for partitions, center plies of solid **fiberboard pads,** and other forms of paperboard that may or may not have specifications of strength, color, or other characteristics. The board is of relatively low density in thickness of 0.006 in. (0.15 mm) and up.

finish, n—in packaging, a term descriptive of the surface of **paperboard** depending on the final machining in manufacture:

(1) dry finish—not dampened before going through the calender rolls. The surface is not as dense nor as smooth as water-finished board;

(2) water finish—dampened on one (or both) sides in the calendering opening to provide a relatively hard and glossy finish.

kraft, n—a term (derived from a German word meaning strength) applied to pulp, paper, or **paperboard** produced from virgin wood fibers by the sulphate process.

linerboard, n—(*1*) **paperboard** used for the flat facings in **corrugated fiberboard;** also paperboard used as the outer plies of solid fiberboard, (*2*) **containerboard** made of blends of reworked paper fibers usually made on cylinder machines but can be made on Fourdrinier or Inverform machines. It is sometimes called jute—a misnomer, since jute fibers are no longer used (See **facing.**)

paperboard blank—a flat piece of **paperboard** that has been cut to size, die-cut, corner cut, scored, printed, or otherwise prepared and ready to be formed or folded and joined, or the flat pieces of parts thereof.

paperboard step—a term applied to trays, shells, or platforms positioned inside a **container** to raise one portion of contents higher than others. It may be attached to a lid for the purpose of holding certain articles positioned when the lid is in closed position.

paperboard stop—pieces of **boxboard** attached to the inside surface of the ends of a set-up paper box lid to hold the base in proper position when the height of the base is less than the height of the lid.

paperboard tube—See **tube.**

paper multiwall-sack—See **bag.**

partition—See **fiberboard partition.**

photodegradable, *adj*—capable of undergoing a significant loss of properties that can be measured by standardized tests after exposure to representative amounts of sunlight.

plank—See **lumber.**

plug—See **closure.**

ply, *n*—(*1*) any of the several layers of solid **fiberboard;** (*2*) any of the layers in plywood or laminated **paperboard;** (*3*) any of the walls of a **multiwall bag.** (See also **veneer.**)

plywood box—See **box.**

point, *n*—a term used to describe the thickness of **paperboard,** a point being one thousandth of an inch. (See **caliper.**)

pouch, *n*—a small or moderate-sized bag, sack, or receptacle for carrying or containing parts.

preservation, *n— in packaging,* the application of protective measures such as cleaning, drying, and the use of preservatives, **barrier materials, cushioning,** and **containers.**

pressure-sensitive-adhesive tape—See **tape.**

primary container—a container which is in contact with the contents.

DISCUSSION—The primary container may be used as the shipping container and may be used to communicate information relative to the product or its use. (See *unit package* under **package.**)

*puncture test***—**See **package testing.**

Radio Frequency Identification (RFID), *n*—a wireless data communication technology that uses radio waves to transfer data from one source to another.

read field, *n*—the area in which an RFID transponder is capable of responding to the interrogator. The outermost boundary of the read field correlates to the critical transponder distance. The distance between the critical transponder distance and the transponder acquisition distance represents an area of RF energy that may or may not be sufficient to activate a passive transponder.

recyclable, *adj*—capable of being removed, separated, or diverted from the solid waste stream in an available program, established by, but not limited to, manufacturers, retailers, or municipalities; processed and returned to use in the form of raw materials or products.

DISCUSSION—See **available program** for further clarification.

recycled, *adj*—diverted, separated, or removed from the solid waste stream, processed and returned to use in the form of raw materials or products.

recycled content, *n*—the percent of a packaging material that is composed of recycled material.

refillable, *adj*—intended to be refilled for its original purpose one or more times in an available program established by, but not limited to, manufacturers, distributors, or retailers.

DISCUSSION—See **available program** and **reusable** for further clarification.

reinforced gummed tape—See **tape.**

resawn lumber—See **lumber.**

returnable, *adj*—intended to be returned one or more times in an available program established by, but not limited to manufacturers, distributors or retailers.

DISCUSSION—See **available program** and **reusable** for further clarification.

returnable container—See **container.**

reusable, *adj*—intended to be used for its original purpose one or more times in an available program established by, but not limited to, manufacturers, distributors, or retailers (see also **refillable** and **available program** for further clarification).

DISCUSSION—Reuse options include, but are not limited to, programs where the container is returned or refilled. Examples include the following:

(1) Reused by the consumer or user as a container for the same product reconstituted from a concentrate supplied by the manufacturer for that purpose; or

(2) Returned from consumers or users for the purpose of reuse as a package for the distribution and sale of the same or similar products; or

(3) Reused by the consumer or users as a dispenser/container for the same product supplied by the manufacturer for the purchase as a refill.

reusable container—See **container.**

reusable pallet—See **pallet.**

revolving drum test—See **package testing.**

RF, *n*—the energy used by RFID systems to activate transponders and wirelessly transfer information.

RF inhibiting, *adj*—a substance or material that causes a significant reduction in the effectiveness of radio waves that reach an RFID transponder.

rough lumber—See **lumber.**

rubbing strips—boards nailed to the underside of **skids,** or floor boards of **crates** or **boxes** to provide a surface upon which to slide the containers. (See also **skid.**)

sack—See **bag.**

saddle—See **packing.**

score, *n*—an impression or crease in **paperboard, corrugated** or **solid fiberboard** to locate and facilitate folding.

DISCUSSION—Set-up boxes made of nonbending paperboard are generally partially cut through at score lines and may be reinforced by gummed paper stays.

score, *v*—to form a score.

seal:—

heat seal—in packaging, a method of bonding mating surfaces under controlled application of heat, pressure, and dwell time.

hermetic seal—in packaging, a seal that prevents passage of air and other gases.

seam—See **container.**

secondary container—a container which encloses one or more primary containers.

DISCUSSION—The secondary container may be used as the shipping container and may be used to communicate information relative to the product or its use. (See *intermediate package* under **package.**)

separator, *n*—any material interposed between articles or packing components. (Compare **buffer, divider, insert, liner.**)

sheathed crate—See **crate.**

sheathing, *n*—**lumber** or sheet materials, such as plywood, **fiberboard** or other suitable **panel** or sheet material fastened to the frame across the openings of a crate to deter pilferage, or entry of dirt or water or of other articles.

shelf life—the length of time packaged materials can be stored under specified conditions and still remain effective in use (C717, C24).

shell—See **packing.**

shiplapped lumber—See **lumber.**

shipping container—See **container.**

shroud, *n—in packaging,* a protective **cover** placed over a load unit, or **package** to cover the top and four sides.

skid, *n*—one of a pair or series of parallel runners usually wood, affixed to the underside of **boxes, crates,** or an item to allow entry of truck forks, or to facilitate sliding. (Compare **rubbing strip.**)

skid box—See **box.**

skid platform—a single platform of wood, metal, plastic, or combination of these materials, elevated a short distance above the floor by runners or legs to facilitate mechanical handling. (Compare **pallet.**)

skin packaging—See **packaging.**

slat, *n*—a thin flat strip of material used as a member of a **box, crate, pallet, basket,** or other similar structure. A basket **stave.**

sleeve, *n—in packaging,* a form, made of various materials and in various shapes, usually open at both ends, that is slipped over an item.

software, *n*—an array of logic, displayed as an application, used to access and control a device.

solid fiberboard—See **containerboard.**

spacer, *n*—a device made of any material that serves to maintain a predetermined distance between any two points in a **shipping container,** or between any interior part and articles contained therein. (Compare **divider.**)

spreader—See **loading.**

staple, *n*—a U-shaped round or flat wire fastener that is: (*1*) used to secure parts together. (It may or may not be clinched); (*2*) driven over wires and bands to hold parts in position; (*3*) used to fasten together the flaps of **fiberboard** boxes. (Compare **stitch.**)

staple, *v*—to fasten with staples.

static load—See **load.**

stave, *n*—(*1*) one of the shaped vertical units of a coopered wooden **container** which, when placed edge-to-edge and bound with hoops around a circular bottom (sometimes top and bottom), forms a **barrel** or other staved container; (*2*) one of the thin, wood or veneer **slats** forming the **body,** sides, or **cover** of a **basket** or **hamper.**

stay—paper or metal material used to join parts of a **box** together at a corner, or to reinforce a cut-score on **solid fiberboard.** It is most commonly used for set-up boxes.

stitch, *n—in packaging*, a metal fastener. Stitches are machine-formed using wire drawn from a spool. (Compare **staple. Staples** are preformed.)

stitch, *v*—(*1*) to unite, by means of **staples** or stitching wire, the joints or parts of containers, or the flaps for **closure;** (*2*) to unite by sewing with thread, as a **sack.**

strapping, *n*—a flexible strip material, generally of flat or round cross section, used to: (*1*) fasten merchandise within a **container,** (*2*) hold together a **bundle** or **bale,** (*3*) reinforce a **shipping container,** (*4*) secure a shipping container or an article to a pallet. (Compare **bracing.**)

stress retention—the residual load expressed as a percentage of the original load on a material after the test specimen has been maintained at a constant elongation for a specified time.

stringer—See **pallet.**

strut, *n*—a short member of a **crate** or **bracing** used as reinforcement and designed to resist compressive forces in the direction of its length.

surfaced lumber—See **lumber.**

tag, *n*—a **paperboard** card, metal plate, or plastic card on which shipping or identification data are given. (Compare **label.**)

DISCUSSION—It is fastened to an article or container, by wires, staples, tacks, or an adhesive.

tape:—

gummed paper tape—a **kraft** paper in a wide range of basic weights, usually 35, 60 and 90 lb (24 by 35–500) that is gummed on one side and slit into rolls of various widths.

DISCUSSION—*in packaging,* it is used largely for sealing packages, bundles and fiberboard boxes.

pressure-sensitive-adhesive tape—in packaging, a backing, as tape, coated so as to permit it to adhere instantaneously to most surfaces with the application of slight pressure.

reinforced gummed tape—an adhesive-coated tape that contains glass, rayon, or sisal fibers embedded in latex, resin or asphaltic laminants between two sheets of **kraft.**

DISCUSSION—It is used for **manufacturer's joints,** or **closure** of corrugated fiber boxes. It is manufactured with the fibers running in a cross-machine direction (most commonly used), or with the fibers running in both directions, (bi-directional), or in a diamond-shaped pattern. (See carrier regulations.)

tapeless measure—a device which measures length using the number of rotations of a wheel in contact with the surface of the material to be measured.

tare weight, *n*—the weight of a **container** or of packaging materials excluding the contents.

tongue-and-grooved, *adj*—type of **lumber** joint consisting of a tongue and a groove on opposite edges to provide close fitting into an adjacent grooved or tongued piece.

transponder acquisition distance, *n*—the distance between the transponder and the interrogator antenna at which a transponder is first detected by an RFID system, when moving the transponder into the read field.

transport package, *n*—a package used to protect goods during the process of distribution (handling, storage and transportation). It includes all industrial packaging and the shipping containers used for the distribution of consumer packaged goods.

DISCUSSION—Note that *distribution package* has the same meaning.

transport packaging, *n*—methods and materials used to protect goods during the process of distribution (handling, storage and transportation).

DISCUSSION—It includes all industrial packaging and the shipping containers used for the distribution of consumer packaged goods. Note that *distribution packaging* has the same meaning.

tube, *n*—a cylindrical paperboard **container,** convolutely or spirally wound, having paper, wood, metal, or combination ends.

collapsible tube—in packaging, a flexible **container** having a dispensing tip and cap at one end, and closed at the opposite end, serving as both package and dispenser.

composite tube—in packaging, a **tube** consisting usually of multiple layers of **fiberboard,** film, or foil providing barrier properties, and an outer layer of paper.

fiberboard tube—in packaging, a cylindrical or multisided form.

DISCUSSION—It may be an element of a box style, or a unit of packaging to add protection or compressive strength, or both. It may or may not be joined. (See **drum** (*2*), **insert, liner, spacer.**)

paperboard (mailing) tube—in packaging, a cylindrical **container** wherein the length does not exceed ten times the girth with a minimum ⅛-in. (3-mm) wall thickness.

DISCUSSION—Closure method should meet U.S. Postal Service requirements.

unitization, *n*—the assembled group of containers or items in a single load that can be handled as a unit throughout the distribution system.

DISCUSSION—Unitization encompasses, but is not limited to, consolidation in a container, placement on a pallet or load base, or securely binding together.

unitized load—See **load.**

unit load—See **load.**
unit package—See **package.**
vacuum packaging—See **packaging.**
V-board—see **corrugated fiberboard.**
veneer, *n*—thin sheets of wood, produced on a rotary lathe, or by slicing, or sawing.

vial, *n*—a small, usually cylindrical, vessel capable of closure, such as for medications, perfumes, essences, and samples.

volatile corrosion inhibitor **(***VCI***)**—See **corrosion.**
wadding—See **cushioning material.**
wrap, *n*—a flexible sheet material used to protect items in **packaging.**

waterproof, *adj*—deprecated term.

DISCUSSION—ASTM policy does not permit inclusion of absolute terms in its standards unless actually used and defined in their absolute sense (*Form and Style for ASTM Standards* ("Blue Book")).[7]

[7] Available from ASTM International Headquarters.

water-resistance, *n*—measured ability to retard both penetration and wetting by water in liquid form.

DISCUSSION—The method of test must be stated, since the degree of resistance depends on the way it is determined or measured.

water-resistant barrier—See **barrier material.**

water-vapor-resistance—measured ability to retard penetration and permeation by water-vapor.

DISCUSSION—The method of test must be stated, since the degree of resistance depends on the way it is determined or measured.

water-vapor-resistant barrier—See **barrier material.**
W-board—See **corrugated fiberboard.**

weather-resistance—measured ability of a material, assembly, or package to maintain designated physical properties and appearance under specified weathering conditions.

DISCUSSION—The method of test must be stated, since the degree of resistance depends on the way it is determined or measured

wet strength paper—See **paper.**
wirebound box—See **box.**