



Pressure Sensitive Adhesive

Glossary of Terms

A

Abrasion Resistance: The ability of a tape to withstand rubbing and still function.

Acrylic: A synthetic polymer with excellent aging characteristics that can be used as either a single component adhesive or a coating or saturate, depending upon composition.

Adhesion: A bond produced between a pressure sensitive adhesive and a surface.

Adhesive: Any material that will usefully hold two or more objects together solely by intimate surface contact.

Adhesive transfer: The transfer of adhesive from its normal position on the tape to the surface to which the tape was attached, either during unwind or removal.

Anchorage: The specific adhesion of a pressure sensitive adhesive to a face material or an anchor coat.

B

Backing (Carrier): A relatively thin flexible material to which the adhesive is applied. Theoretically, any material that is reasonably flat, relatively thin, and flexible could be used as a tape backing.

Backscoring (Crack & Peel): Cutting the bottom release liner in such a way as to aid in the dispensing or applying of the product.

Backsplit (scoring liner): Slits in the release liner to facilitate easy removal by hand.

Baloney (Cevi, Lathe or Lever) Slitting: This process utilized standard length log rolls, cutting through both tape and core roll after roll. This method allows for quicker change-over to different tapes and enables the converter to produce smaller quantities of a certain size than rewind slitting.

Bi-Directional: Related to strapping tapes, in which the reinforcing material consists of filaments in both the length and the cross directions, usually a woven cloth.

Bleeding: Penetration through the tape of a coloring liquid (paint, etc.) onto the surface to which the tape is applied.

Bursting Strength: The ability of a tape to resist damage when a force is applied evenly and perpendicularly to the surface of a tape.

Butt-cut: Refers to a conversion process where a die creates individual pieces by cutting through the laminated material and adhesive. In butt-cutting there is no waste area left between the adjoining pieces.

Butt-splice: A splice made by joining tape end to end without overlapping. The splice is assembled by a thin single-coated tape centered on both sides.

C

Caliper: A measurement of thickness expressed in thousands of an inch (English units) or millimeters (metric units).

Carrier: Sometime used to refer to the backing material, particularly in double-faced tapes.

Coating Weight: The weight of a coating per unit area.

Cohesion (cohesive strength, internal bond): The ability of the adhesive to resist splitting. Good cohesion is necessary for clean removal.

Converter (Fabricator): One who modifies products to enhance their value and final usage. Products can be modified primarily by: laminating, die-cutting to custom shape, precision slitting, adding/removing liners & cutting pieces to length.

Creep: A slow movement of the adhesive or backing under stress.

Creped: Paper that has small “folds” in it, giving it high stretch.

Cross-Linked (Cured): The development of a three-dimensional structure in an adhesive, which is activated normally by heat. An improvement in shear resistance, high temperature resistance, and oil or solvent resistance will normally result.

Cupping: A slight U-shaped deformation of the tape (at right angles to the length) which usually appears after unwind tension is relaxed.

D

Delamination: A separation of the backing into two distinct layers, separation between laminations of a tape consisting of more than one backing, or the separation between filaments and backing of a filament-reinforced tape.

Die-cut: The thin line of severance between a pressure sensitive tape or label and its matrix made by the cutting edge of a die.

Die-cutting: Process by which any shape, pattern or design can be cut out of various pressure-sensitive tapes, utilizing customer-made dies.

Double Coated Tape: A pressure-sensitive tape consisting of a carrier with adhesive coated on both sides (typically, a liner is necessary to unwind the roll.)

Dry Edge: Refers to the liner width extending beyond the actual adhesive tape width, for easy liner removal. Also referred to as finger lift liner.

E

Edge Curl: The peeling back or lifting of the outer edge of a tape after application. See cupping.

Elastomer: An elastic, polymeric substance, such as a natural or synthetic rubber.

Extended Liner (Dry Edge): Refers to the liner width extending beyond the actual adhesive tape width, for easy liner removal. Also referred to as finger lift liner.

F

Face side: The unlined side of a double-coated tape.

Feathering: A jagged, irregular point line frequently characterized by small “feathers” of the top-coat projecting into the masked area.

Filaments: This longitudinal “threads” of glass, polyester, nylon, or other high-strength materials.

Film: Uniform, homogeneous, nonfibrous synthetic webs.

Flagged Rolls: Used to identify a bad spot in the roll for internal processing (or possibly a splice).

Flagging: A peeling away from the surface of the end of a length of tape, particularly in a spiral-wrap application.

Flame Resistance: The ability of a tape to withstand exposure to flame. Fireproof materials will not burn even when exposed to flame. Flame-resistant (fire-retardant, self-extinguishing) materials will burn when exposed to flame but will not continue to burn after the flame is removed.

Flatback: Smooth paper backing.

Fluorocarbon Films: A film with very high and low temperature limits, excellent electrical characteristics and very slippers, non-sticking surface. One example is DuPont's Teflon (polytetrafluorethylene).

Fluting: Distortion of a roll of tape such that layers no longer form a circle.

Foam: A soft, cushiony material formed by creating bubbles in the base materials, such as natural or synthetic rubbers, or other elastomeric materials.

G

Gapping: Opening between layers of tape within a roll.

Ghosting: A haze-like deposit of an adhesive left by a tape after its removal.

Gloss: A light reflection characteristic of tape backings, usually expressed by such terms as glossy, low gloss, matter, etc.

H

High-speed Unwind: Unwinding or dispensing of tapes at a relatively high rate of speed, usually more than 50 feet per minute.

Hot Melt (pressure sensitive adhesive): A pressure sensitive adhesive, applied to the backing in a hot molten form, that cools to form a conventional pressure sensitive adhesive.

Holding Power (Shear Adhesion): The ability of a tape to resist the static forces applied in the same plane as the backing. Usually expressed in a time required for a given weight to cause a given amount of tape to come loose from a vertical panel.

I

Impact Resistance: The ability of a tape to resist sudden impacts, pulls or shocks as may sometimes be encountered by packages in transit.

Individual Pieces: Each die-cut piece is individual, not a roll.

Insulating Tape: Normally refers to tape used for electrical insulation.

Insulation Resistance: The ability of tape to prevent the flow of electrical current across its surface, usually measured on the backing.

K

Kiss-cutting: Die-cutting process by which only the actual usable part remains on the liner; all waste (matrix) around the die-cuts is removed to allow for easy removal.

Kraft: A sulfate wood pulp paper. See Saturation.

L

Label Stock: Pressure sensitive materials that are usually printed, frequently die-cut, furnished in roll or sheet form with a liner, and intended for use as labels.

Laminating: Joining of several layers of varying materials utilizing pressure-sensitive tapes.

Lap splice: A splice made by overlapping the ends.

Lifting: A situation where a section of tape has pulled away from the surface to which it have been applied.

Liner Side: In roll form it is referred to the side of the roll protected by the liner.

Log Roll: A roll of tape wide width, wound in standard product length.

M

Master Roll: A roll of tape as wide as 74", wound in a predetermined length of 250yds or more.

Matrix: Scrap material that is left after a die cuts a pattern. Usually removed and thrown away.

Memory:

Metal Foil: Thin, flexible sheets of metal, such as aluminum and lead, used as tape backings because of inherent properties such as weather resistance, reflectivity, etc.

Migration: The movement, over long period's of time, of an ingredient from one component to another when the two are in surface contact. May occur between tape components or between a tape and the surface to which it is applied. Some plastic films and foams contain plasticizers which are apt to migrate into the tape adhesive, causing the adhesive to soften.

Mils: Used in describing adhesive coat weights or thickness. The term means thousandths of an inch.

N

Non-Oriented: A material that has yet to be stretched or expanded to its maximum size.

O

Off-Core: Layers of tape are in correct alignment, but tape is displaced sideways on core.

Offsetting: Occurs when a printed tape is unwound and some of the printing ink is picked off by the adhesive or migrates into the adhesive. It is, in effect, a delamination of the ink.

Oozing: A "squeezing out" of the adhesive from under the backing. It is occurs when the tape is in roll form, the edges of the roll become tacky.

Out-Gassing: The release of volatile components under heat or vacuum.

Over-run: A quantity of material in excess of the amount ordered. Trade practices permit +/- 10% tolerance for customer over-runs and under-runs.

P

Pancake-wound rolls: Most typical supply form for pressure-sensitive tapes. Each layer of tape is directly on top of the last one (with or without a liner).

Pattern coating: Refers to width and spacing arrangement of adhesive laid down parallel to machine direction, across the width of a pressure sensitive stock, during its manufacturing.

Peaking: Large singular upheavals in the outer layers of a roll of tape.

Plain cloth: Fabric woven from cotton, glass, or other fibers without further treatment.

Polyethylene (PE): A tough, stretchy film having very good low-temperature characteristics.

Polyester: A strong film having good resistance to moisture, solvents, oils, caustics, and many other chemicals. It is usually transparent.

Polypropylene (PP): A cousin of polyethylene, with generally similar properties, but stronger and having a higher temperature resistance.

Polyurethane Foam: Closed cell foam with adhesive on two sides, used in permanent bonding applications, to replace mechanical fasteners, epoxies and screws.

Perforating: Hole-punching the release liner, usually between kiss-cut parts.

Pressure Sensitive: A term commonly used to designate a distinct category of adhesive tapes and adhesives, which, in dry (solvent-free) form, are aggressively and permanently tacky at room temperature and firmly adhere to a variety of dissimilar surfaces upon mere contact without the need of more than finger or hand pressure. They require no activation by water, solvent, or heat to exert a strong adhesive holding force toward such material as paper, plastic, glass, wood, cement, and metals. They have a sufficiently cohesive holding an elastic nature so that, despite their aggressive tackiness, they can be handled with the fingers and removed from smooth surfaces without leaving a residue.

Pressure Sensitive Tape: A combination of a pressure sensitive adhesive and a backing.

Primer: A primer is used to increase the bond of the adhesive to the backing. The use of a primer assists in keeping the adhesive on the backing when a tape is removed.

Printability: The ability of a tape to accept and hold a printed legend and especially to resist offset of the printing when rewound into a roll after printing.

Puckers: A distortion associated with laminated constructions. Puckers appear as ripples on the surface exhibiting separation of the two laminated components and generally run in the cross machine direction.

R

Reinforcements: A material added to a tape to provide additional strength.

Release: The adhesion level between a release liner and the adhesive/carrier combination. High or tight release means the liner is more difficult to remove producing high release adhesion. Low or easy release means that the liner removes readily.

Release Coating (easy unwind treatment): A coating applied to the backing on the side opposite the adhesive that provides ease of unwind and prevents delamination or tearing. Without a release coating, the tape would adhere to its own back and would not unwind.

Release Coat Transfer (Silicone Transfer): Particles of the release coat stick to the adhesive on unwind; the resulting tape will have little or no ability to stick.

Release Liner: Siliconized paper or film coated on one or both sides that protects the adhesive until use. The liner is removed and discarded before application. Most frequently found on double-coated tapes and labels. Fluoro Silicone liners are available in special situations that required silicone adhesive to release.

Rewind Slitting: Preferred method for slitting large volumes of standard sized rolls of pressure-sensitive tape. In this process, large master rolls of jumbos are used to unwind tape and then are rewound layer over layer across a set of pre-spaced cores.

Roll Form: Die-cut pieces that are wound with the added liner in the form of a roll.

S

Saturation (impregnation): Adding material (saturant) to the backing for improvement of physical properties and resistance to various deleterious environments.

Self-Wound Roll: A roll of tape in which each layer of tape is directly on top of the last one. The roll contains no liner.

Shear Strength: The resistance of an adhesive film to splicing when a load is applied along the plane.

Shelf Life: The period of time which a product can be stored under specific conditions and still remain suitable for use.

Silicone: A unique polymer system that can be a very effective release coating, or pressure sensitive adhesive capable of functioning effectively at extreme temperatures.

Silicone Adhesive: Adhesive system designed for sticking to silicone surfaces. (i.e.: splicing liners).

Single Coated Tape: A pressure-sensitive tape consisting of a carrier with adhesive coated only on one side.

Single Faced: The adhesive is applied to one side of backing only.

Slip Sheet or Interliner: A treated sheet used to cover the adhesive to facilitate handling.

Specification: A document that spells out the requirements for particular tape or a group of tapes. It normally details the physical properties, performance, general composition, sampling procedure and packing characteristics.

Splice: A point at which two separate lengths of tape are joined together.

Spool (Traverse) Wound Rolls: One layer of tape starts on a side of the core. The next layer overlaps with the first one and then the tape is wound back and forth traversing from one side of the core to the other. This process allows for much longer rolls (up to 33,000yds depending on the width and thickness of product) thus reducing the downtime involved with constant roll changes.

Substrate: The backing to which a pressure-sensitive adhesive is applied.

T

Tacky: The condition of the adhesive when it feels sticky or highly adhesive. Sometimes used to express the ideas of pressure sensitivity.

Tearing: Breaking or slivering of a tape during unwind.

Tear Resistance: The ability of a tape to resist tearing after a tear have been started by cutting or nicking of the edge.

Telescoping: A sideways sliding of the tape layers, one over the other, such that the roll looks like a funnel or a telescope.

Tensile Strength (brake strength): The force required to break a piece of tape by pulling on opposite ends of the piece.

Machine direction tensile. Tensile strength measured parallel to the length of the tape. Unless otherwise specified, tensile strengths are measure in the machine direction.

Cross direction tensile. Tensile strength measured at right angles to the length.

Wet tensile. Tensile strength of tape that has been kept wet for a specified period of time. Measures ability of tape to function satisfactory when exposed to moisture.

Thickness: Distance from one surface of a tape, backing or adhesive to the other, usually expressed in mils or thousandths of an inch. This is usually measured under slight pressure with a special gauge.

Tissue: Typically referred to as a carrier in a double coated product. A tissue carrier can make slitting and die-cutting easier, by preventing adhesive flow. Tissue differs from film carriers in that it does allow for some elongation and permits more conformability.

Tolerance: Maximum allowable variation from agreed-upon or specified dimension.

Transfer Tape: An unsupported pressure-sensitive adhesive tape.

U

Uniformity: The consistency of a single type of tape either within a roll or from roll to roll or from lot to lot.

Un-Plasticized Vinyl (UPVC): A tough durable plastic film, differing from PVC principally in the UPVC is not very stretchy.

Unwind or Unwind Adhesion (unrolling): The force required to remove tape from the roll.

V

Vinyl or Plasticized Polyvinyl Chloride (PVC): A tough, durable plastic film having excellent resistance to oils, chemicals, and many solvents. It has excellent abrasion resistance. It also can be colored. Its high stretch is due to the addition of a plasticizer.

Vinyl Nitrile Sponge Rubber: Closed cell, adhesive one side, offers good oil resistance and shock absorbency.

Void: A bare uncoated area on either the adhesive or release-coated side of the tape.

W

Water Penetration Rate: The weight of water transmitted through a controlled area of tape under a specified time and conditions.

Weaving: A poorly wound roll of tape in which the individual layers of tape are not in alignment with the other layer.