



KLINGSPOR

ABRASIVE TERMS DICTIONARY

Abrasive – a substance used for abrading, grinding, polishing, lapping, such as the natural materials Emery, Garnet, Flint, and Crocus, and the manufactured or electric furnace materials: Aluminum Oxide, Silicon Carbide, and Alumina Zirconia. One of the three essential components of a coated abrasive product (backing, adhesive, abrasive grain).

Abrasive Planing – rough sanding of glued-up wood panels or lumber prior to intermediate sanding or the application of overlays.

Alloy – a mixture, solid solution or combination of two or more metals (i.e. brass is an alloy of copper and zinc); a substance obtained by the mixture or combinations of a metal and a nonmetal; a baser metal combined with a finer one.

Alumen – an alloy 88% aluminum, 10% zinc, and 2% copper which can be forged and machined. It is heavier than aluminum and very strong.

Alumina – another name for Aluminum Oxide.

Alumina Zirconia – a high-performance alloyed abrasive formed by zirconia deposited in an alumina matrix. An alloy of aluminum oxide and zirconium oxide. Designed for heavy duty stock removal for metal and wood, with self-sharpening characteristic. Belts are normally blue in color.

Aluminum Oxide – an abrasive made by fusing the mineral bauxite. A very strong and tough abrasive. The most commonly used abrasive for wood and metal. Normally brown or reddish-brown in color.

Angle Iron – a rolled-steel member, L-shaped in section.

Anneal – to heat a metal piece to its critical temperature and then allow it to cool slowly, thus reducing brittleness and increasing ductility.

Anodizing – a finishing treatment on aluminum metal, similar to plating, which makes the surface of the metal tougher and also used for decorative coloring; an electrical process in a chromic-acid solution which deposits a hard surface film of aluminum oxide on aluminum parts. It serves as an excellent base for paint.

Antistatic – special coated abrasives for woodworking which reduce static electricity buildup and allows sanding dust to be better collected by the dust control system.

Arbor – the spindle of the grinding or sanding machine on which the contact wheel, idler pulley, or flapwheel is mounted; a shaft, mandrel, spindle or axle; on a milling machine the cutter is often mounted on an arbor – on a lathe the work is sometimes mounted on an arbor.

Arbor Hole – the hole in the contact wheel or idler pulley sized to fit the machine arbor.

Arc of Contact – on a contact wheel, that portion of the circumference of the coated abrasive belt touching the work being ground.

Arc Welding – welding done using heat produced by an electrical arc between the work, and an electrode/filler metal. Intense heat-approximately 5500°F.

Area of Contact – the total area of the grinding surface of a coated abrasive product in contact with the work being ground.

Assemblies – a term used to describe a section of abrasive used in the loading of a Vonnegut head brush-backed sander. Available with the abrasive strips scored in a "straight" or "staggered" configuration, or could be unscored strips. These cloth specialties are used for fine sanding of contoured wood parts when finishing is required without destroying workpiece detail.

Aught – see Grit Symbol Scale.

Automatic Tracking – a system that ensures the coated abrasive belt runs true on a contact roll or idler. These automatic tracking systems are usually controlled by either electric eyes or air systems, and constantly adjust belts during operation to achieve ideal and consistent tracking.

Backing – a flexible or semi-rigid material to which abrasive grain is bonded by an adhesive. Paper, cloth, and vulcanized fibre are the major backings used for coated abrasives.

Backstand – one of the most popular industrial abrasive belt machines for offhand grinding and finishing. Preferably floor-mounted, it usually provides tracking and tensioning controls. Work is applied to the contact wheel below the center line.

Back-Up Pad – usually a rubber or composition type material to which an abrasive disc is attached. The back-up pad supports the disc during the grinding operation and is normally the same diameter or slightly smaller than the disc.



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Bands (Abrasive) – spirally wound and bonded to an inner liner, these cylindrically-shaped cloth specialties are used on expanding rubber drums for sanding and polishing hard-to-reach corners, grooves, and contoured surfaces. Also called "spiral bands" or "no-lap bands."

Bar – a metric measurement of pressure. One bar is approximately equal to 14.5 p.s.i. Used as a pressure measurement on air gauges on European machinery.

Batch System – in rough lumber sanding, several boards of equal or unequal widths of the same relative thickness, are accumulated side by side into a unit roughly equal to the width of the abrasive belt in use. This "batch" is then fed into the sander and all the boards are sanded simultaneously.

Belt Joint (Splice) – The area of an abrasive belt where the two ends are spliced together with an adhesive. See Butt Joint and Lap Joint.

Belt Joint Marks – a pattern left on the workpiece at regular intervals. Normally caused by a belt joint specification that is not suitable for the application.

Belt Tension – the force or strain put on a coated abrasive belt during use, normally expressed in pounds per inch of belt width, or gauge pressure at air tension cylinder.

Benchstand Grinder – an offhand grinding machine attached to a bench, usually has either one or two wheels mounted on a horizontal spindle. Common sizes are 1" x 42", 2" x 48", and 6" x 48".

Bessemer Steel – a mild (soft) steel produced by the Bessemer process and used for girders, rails, boilers etc.

Blackwork – the work of a blacksmith in contrast to the whitework of the silversmith.

Board Foot – a unit of measurement for lumber equal to the volume of a board 12" x 12" x 1", i.e. 144 cubic inches.

Bond – the layers of adhesive in the making process of coated abrasives.

Bowed Edge – a condition affecting one or both edges of a coated abrasive belt or roll. The belt or roll will arc or skew in one direction when laid out on the floor, instead of following a straight line. Normally one edge of the product is longer than the other.

Bullnose – see Noseblock. Also refers to a profiled edge on a table; "radius edge."

Burning (of Workpiece) – a change in the characteristics of the workpiece being ground. Normally detected by a surface discoloration or distinct burning odor.

Burnishing – using coated abrasives to create a special effect on a workpiece (refining the surface). Usually done to develop a smooth, lustrous surface finish on metal, leather, etc. Also refers to a wood surface which in the fibers have become too dense by improper sanding so that stain does not properly penetrate. Not necessarily a problem on some operations, but usually not desired.

Bushing – a metal or plastic insert used to alter the size of a center hole (such as flapwheels) to accommodate a smaller mandrel or arbor.

Butt Joint (Belt) – two pieces of coated abrasive "buted" together (with no overlap) to form an endless belt. A very strong, thin, reinforced tape is used on the back of the butt joint to hold it together (KLINGSPUR joints #3 and #4 are both butt joints).

Cabinet Room (Furniture) – the assembly area in a furniture plant where case goods are sanded prior to staining. Involves only bare wood sanding.
C.A.M.I. – "Coated Abrasives Manufacturers' Institute." A trade association composed of US coated abrasive manufacturers.

Carbonization – the preparation of low-carbon steel for heat treatment by heating for several hours at about 2000 degrees F while it is packed in some carbonizing material, then allowing it to cool slowly.

Cast Steel – steel which has been made into a desired shape by the casting method.

Carborundum – a trade name for certain abrasive products, often misused as a generic name for silicon carbide.

Chatter or Chatter Marks – an undesirable, repetitive pattern created on the surface of a workpiece, usually at regularly-spaced intervals, due to an out-of-round or out-of-balance condition in the abrasive machine, or improper belt splice.

"Chicken" Tracks – small, interrupted indentations or raised areas, appearing as a pattern, on a flat wood workpiece after sanding. Normally associated with wide belt or oscillating drum sander applications.



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Chuck – a device for holding a workpiece being ground. Also a device to hold a cutting tool, drill bit, or spindle-mounted flapwheel.

Climb Grinding – the workpiece is presented to the abrasive belt in the same direction the belt is running. (Versus "conventional" grinding).

Close-Grained Wood – wood with narrow, or inconspicuous annual rings, but also can refer to wood with small pores (in this sense, the term "fine-textured" is also used) and/or narrow grain pattern. Examples are maple, cherry, birch and pine.

Cold-Rolled Steel – steel sheets or coils that have been dimensioned with heavy rollers. Identified by a shiny finish, as opposed to hot-rolled steel, which has a black colored mill scale. Not as tough or ductile as hot-rolled steel.

Combination Sanding Head – a wide belt grinding head that offers the option of using the contact roll or plated either individually or in tandem.

Compensator – an equipment option on wide belt sanders that reduces the feed speed of the work transport system when excessively oversized work enters the machine. This feature improves coated abrasive belt life and reduces machine wear.

Composite Panel – man-made wood panels made up of a core material similar to particleboard, with a thin veneer of softwood on each face.

Cones – small belt like specialty items which are cone shaped and fit over a solid rubber, tapered drum. Used for finishing curved surfaces and recessed areas.

Contact Wheel or Contact Roll – the wheel (or roll), usually rubber, metal, or felt, over which a coated abrasive belt runs and against which work is applied. Aggressiveness varies with density, angle and depth of serration (if any) and ration of groove-width to land-width.

Contour Sanding – the sanding of irregular-shaped parts or compound moldings.

Conventional Grinding – the workpiece is presented to the abrasive belt opposite the direction the belt is running. (Versus "climb" grinding).

Conveyor Belt – usually an endless belt configuration that positions, holds, moves, and finally clears workpieces through the abrasive heads on a sanding machine.

Conveyor Machine – a coated abrasive grinding machine on which the workpiece is moved by a belt under the abrading head of the machine.

Copy Shape Sander – a sander which shapes and then sands contoured parts such as chair legs, arms, gun stocks etc.

Creasing (of a Belt) – folding of the coated abrasive belt on the contact roll or wheel because it has become stretched in service, or is too flexible for the operation. The term is also used to describe a light scoring of the back of the belt so that it will "hinge" and fit into the complex shape of a hand block.

Critical Temperature – the temperature at which certain chemical changes take place in metal during heat treatment. This temperature varies with different metals.

Crocus – a natural abrasive of iron oxide particles. Used mostly for cleaning and polishing soft metals.

Crossband – to place the grain of layers of wood at right angles in order to minimize the shrinking and swelling. Also, plywood of three or more plies, or a layer of veneer whose grain is at right angles to that of the face plies.

Cross-Grain Scratch – refers to a scratch created by sanding across, or 90 degrees to the direction of the wood grain.

Crown – the center of a contact wheel, contact roll, or idler wheel face where the thickness or diameter increases from edge to center. The crowned area is what allows an abrasive belt to track properly.

Cutting Rate – the amount of material removed by a coated abrasive from the workpiece, per unit of time.

D-A Sander – "Dual Action," or random orbital sander. Scratch pattern is random and very fine. Can be air or electrically powered, and usually hand held.

Deadhead – see Noseblock.

DeLappe Discs – coated abrasive discs which have radially-cut slits emanating from the center and around the disc periphery (can be flutter discs or spool sanding discs). Used primarily in the woodworking industry on felt spools for sanding contoured surfaces and as a flutter sander for machine sanding grooves and routed areas. Also known as flutter discs or wing discs (4 wing, 8 wing, 16 wing, etc.)



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Depth of Cut – refers to the amount of stock removed during each pass of a sanding or grinding operation. Usually expressed in the thousandths of an inch, e.g. depth of cut .125", etc.

Die Cavity – the hollow space inside a die where the metal solidifies to form a casting.

Die Stamping – a piece formed or cut out by a die.

Die Casting – a method of producing castings to finished size by forcing molten metal into a suitable mold. An object or part formed by die-casting.

Dinging Hammer – a hand hammer used to straighten or remove dents from sheet metal.

Directional Arrow – printed on the back of coated abrasive belts, directional arrows point the direction the belt should be run on the machine. Refers to the lap joints only. Belts manufactured with butt-type joints may be run in either direction and the arrow will point in both directions. Flapwheels also carry directional arrows signifying proper direction of rotation.

Disc – a round, flat-coated abrasive product with or without a center clamping hole that is affixed to a rotating or oscillating plate or back-up pad for portable or stationary grinding.

Disc Back-Up Pad – a support pad designed to back up a coated abrasive disc during grinding. Back-up pads can be made from rubber, foam, or metal.

Disc Grinder or Sander – a machine on which abrasive discs are used for grinding or sanding. Usually refers to circular-motion disc machines.

Disc Nut – used to secure disc to backup pad.

Dog Ear – a protrusion, usually on one edge of a coated abrasive belt, at the joint, caused by uneven belt cutting or improper joint alignment at belt pressing.

Down Grade – the diminishing of the value of lumber by creating defects during processing. This commonly occurs during rotary knife planing when tearouts, knot loss, and splitting occur.

Draw – to stretch or shape metal by hammering. To temper steel by gradual or intermittent quenching of the material.

Drawer Sander – a special platen-type sander for sanding the dovetails, front and rear, of wooden drawers after assembly.

Dressing – sanding or cutting the face of a wheel, such as a flapwheel, to restore balance to the wheel or to cut a shape into the wheel.

Drop Forging – a shaped object formed between dies by the use of a drop hammer. The process for forging with a drop hammer.

Drum Cover – refers to the coated abrasive wrapped on the drums of a multiple-drum sanding machine.

D.S.A. – a German standards organization, The German Grinding Wheel Committee. Regulates and issues special permits in Germany for manufacturing grinding wheels and discs, including flapwheels and SMT discs.

Dubbing – the tapering of any of the edges of flat stock which has been processed through a wide belt or drum sander. Most commonly occurs on the leading or trailing edge of the work.

Ductile – capable of being readily pressed or drawn or otherwise formed into various shapes without fracturing.

Ductility – the capability of being hammered into thin layers or of being drawn out into wire, as of certain metals. Also called "pliant".

Dulling – the wearing away of the cutting edges of abrasive grains through use. It occurs to some degree during any abrasive operation and will finally result in the inefficient cutting or abrading, at which time the coated abrasive should be discarded or shifted to lighter work, regardless of its appearance.

Durometer – an instrument used to measure hardness of rubber and other materials. Consists of a small drill or blunt indenter point. Relates to the performance characteristics of rubber contact wheels and rolls.

Durometer Hardness – the hardness of a material, usually rubber, as measured by a durometer.

Early Wood – the portion of the annual growth ring that is formed during the early part of the growing season. It is usually less dense and weaker mechanically than latewood.



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Edge Cut – grooving or rounding of the edges of work caused by excessive stock removal at the coated abrasive belt edge. Also called the edge snipe.

Edge Foiler – a machine which applies a decorative foil edge to wood parts. Usually includes one or more mold sanding heads prior to foil applications. See "Foil."

Edger – Disc sanding machine used in floor sanding to sand edges next to walls. Sometimes called Edget sanders.

Edge Sander – a machine used for edge sanding in a furniture plant. Also called a "side stroke."

Edge Sanding – the sanding of any furniture components requiring flatness and squareness of integrity, such as frame legs, end boards, etc.

Edge Shed – a term used to describe a condition in which the abrasive grain "shells" off the edges of a coated abrasive product (usually a belt) during use. Usually caused by too severe an application of the coated abrasive product.

Emery – an abrasive that is a natural composite of Corundum and Iron Oxide. The grains are blocky, cut slowly, and tend to polish the material being abraded.

End Grain – the end or portion of a cut or sawn piece of wood that has been cut across the grain. It is denser than the "straight" grain, and is more prone to sanding problems due to heat. End grain absorbs stain more readily than straight grain and must often be sanded to a finer grit to reduce absorption.

Expander Wheel – a rubber- covered wheel used with abrasive bands (essentially belts) to grind and polish. Centrifugal force expands the rubber and holds the band securely.

Extrusion – a method of forming metal by forcing it through a die.

Fabrication – work done in the shop or factory, as cutting, punching, sub-assembling, riveting or welding rolled sections together, before delivery to the building site. Making by combining parts, assembling.

Face To – machine a flat surface on a metal piece by means of a machine tool.

Fancy Face Veneer – elaborate veneer work which uses many separate pieces of veneer, and often of different wood species. Often seen in table tops, etc.

Feed (Cross) – on surface type sanding operations (i.e. stroke sanding), the rate of horizontal feed of the coated abrasive across the work.

Feed (Down) – on conveyor operations or surface sanding, the distance at which the belt and contact wheel are fed into the work.

Feed On – machine tools in which the work revolves, feed is the rate of travel of the tool in a cutting operation, expressed in thousandths of an inch per revolution of the spindle. On machines on which the cutting tool revolves, it is the rate of travel of the work table.

Feed Rate – the distance that the stock being processed moves during a given interval of time or operational cycle.

Felt – used in strips or sheets as a soft backing on a platen, underneath the graphite canvas. Reduces the scratches of a sanding belt and allows for more conformability.

Felt Padding – refers to the surface material on drum sanders, vibrating sanders, platen shoes on stroke sanders, etc. Felt offers a resilient surface to reduce unwanted scratching.

F.E.P.A. – "Federation of European Producers of Abrasives." Normally used to describe a European grading system for abrasive grain to differentiate it from the US A.N.S.I. system. Products graded to the F.E.P.A. system have the letter "P" prior to the grit designation.

Ferrous Metals – metals whose major ingredient is iron.

Fiberboard – see MDF.

Fibre (Backing) – a very hard, strong, coated abrasive backing material consisting of multiple plies of chemically-impregnated paper. Used primarily for disc products.

Figure (Wood) – the pattern produced in a wood surface by annual growth rings, rays, knots, deviations from regular grain such as interlocked and wavy grain, and irregular coloration.



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Filler – in woodworking, any substance used to fill the holes and irregularities in planed or sanded surfaces to decrease the porosity of the surface before applying the finish coatings.

Fin – a thin projecting edge on a casting or other metal surface.

Finish – the surface quality of appearance, such as that produced by sanding or polishing.

Finish Planing – to remove extruded glue from the surface of glued-up wood panels, and to attain a uniform thickness.

Finishing Paper – products manufactured on "A" weight (40 lb paper) or "B" weight (60 lb paper) backings, normally in fine grits, usually used to hand-sand for final finish on wood, metal, etc.

Finishing Room – refers to the area in a furniture plant where the primary sanding operations for finishing furniture are performed, including wash coat, sanding, and sealer sanding.

Finish Sanding or Finish Grinding – the final operation which produces the desired finish on the workpiece.

Fish Eyes – small bubbles in a wood finish, which are usually caused by contamination by silicon from lubricants or furniture polishes.

Fixture – a device which holds the work while cutting tools are in operation. It differs from a jig in that it has no guides or special arrangements for guiding the tools.

Flanges – circular metal plates used to support and drive contact wheels, or flapwheels.

Flapwheel – flat pieces of coated abrasive sheets (flaps) arranged and fastened together on a core like spokes of a wheel. The rotational slapping action of the flaps does the abrading and polishing.

Flash – a thin projection of excess metal, plastic, or rubber that forms at the seams between dies in casting and forging.

Flex – a controlled breaking of the adhesive bond that holds the abrasive grain to the backing of a coated abrasive product. More flexibility is needed for detailed or contoured workpieces.

Flint – a natural abrasive not commonly used today. A form of quartz, it is too soft for most types of sanding. Only used for hand sanding.

Flutter Sanding – sanding irregular, intricate shapes or carvings which may be found on furniture frames, legs, chair backs, etc. Normally done with eight-winged DeLappe discs folded into a pinwheel configuration. Also can be done with specially die-cut sheets (called "flutter sheets").

Foil – a vinyl film which is bonded to MDF tops or edges. The foil is normally solid colors or has a wood grain appearance. Poor sanding of the board will often be visible through the thin foil layer.

Forge – to shape hot metal by hammering or pressing.

Form 3 Center Hole – KLINGSPOR code for a fibre disc with a special arbor hole with 4 slots around the hole. Makes the holding nut easier to secure than on a standard arbor hole.

Foundry – an establishment in which articles are cast from metal.

F.P.M. – feet per minute

Freehand Gripping – grinding by holding the work against the coated abrasive by hand; usually called offhand grinding.

Friable – referring to the property of a substance capable of being easily rubbed, crumbled, or pulverized into a powder. Regarding abrasive grain, friability is the resharpening and toughness characteristics of a particular grain type.

Galvanize – to coat a metal surface with zinc as protection against corrosion.

Galvanized Steel – steel which has been dipped into a bath of zinc metal. Done to prevent rusting of the steel.



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Gapped Joint – refers to a belt joint condition in which the two joint ends do not butt tightly together. There is a space or "gap" at the point of contact of the belt ends. Condition may lead to premature product failure.

Garnet – a naturally occurring abrasive grain, red in color, made by crushing semi-precious garnet material. Still used occasionally in the woodworking industry.

Gate – the opening where molten metal enters the mold cavity.

Gauge – a term used to describe the thickness of sheet metal.

Gel Coat – a plastic finish sprayed onto fiberglass which gives it the characteristic smooth, glossy look.

Glaze – to become glassy, take on a glaze; in reference to grinding wheels of the spaces between the grit of the wheel becomes filled with metal or other particles and reduces the abrasive quality of the wheel.

Glazing – belt damage caused by excessive working pressure or speed. The abrasive is prematurely dulled and generates excessive heat.

Glue – a coated abrasive adhesive produced by the hydrolysis of animal hides. It is gelatinized by water and dries to form a strong adhesive layer and may be used with or without filler.

Glue Bond – coated abrasive products that use animal hide glue in both the maker and sizer adhesive coats. The glue may be used alone or with an inert filler or extender.

Glue Size – a method of applying a mixture of glue and water to a wood panel, allowing to dry, and then sanding. This will reduce wood fuzz and allow a smoother finish.

Grading – the process used to separate abrasive grains into specific size groupings.

Grain (Wood) – the direction, size, arrangement, appearance, or quality of the fibers in wood or lumber.

Graphite – friction-reducing material which is available in a wax stick for applying directly to the belt backing; a chemically inert variety of carbon with a metallic luster and an oily feel, used as a lubricant, and in the manufacture of electrodes, crucibles, lead pencils, etc. Also called black lead.

Graphite Coated Canvas – canvas with a layer of graphite adhered to it. Designed to reduce friction on a platen type grinding machine, it is used between the platen and the back of the belt.

Grinding – removing material (other than wood) with a coated abrasive product; usually referring to the use of coarser grit sizes.

Grit – designation of abrasive grain size, reflecting the number of the smallest openings per linear inch in the screen through which the grain will pass. Can be either US "C.A.M.I." grade or European "P" grade.

Grit Symbol Scale – older abrasive grit size scale still used occasionally in the furniture and floor sanding industries. The grit sizes are read as "aught" sizes.

Groove – refers to the slots in a serrated contact wheel or roll adjacent to the lands. Land-to-groove ratio has significant bearing on the aggressiveness of a contact wheel.

Hand Block Sanding – using a flat block when sanding with belts or sheets, usually to finish wood workpieces. Flat hand blocks are used to polish flat stock, while formed blocks are used to sand shaped moldings.

Hardboard – manufactured into pegboard, wall paneling, drawer bottoms, and backs of dressers.

Hardwoods – the wood of any broad-leaved tree bearing its seeds in a closed cavity. This term does not relate to the density of the wood.

Heartwood – the central supporting column of the tree trunk, consisting of matured wood in which little further change will occur.

Heel Breaster – a type of abrasive product used in shoe manufacturing and repair for sanding the curved section of a shoe heel. It is a U-shaped cloth disc (looks like half of a fibre disc), which forms a cone when placed into a special holder.

HP – horsepower



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Hone – to sharpen or dress with a hone. A stone or fine grit, used for sharpening cutting instruments or for obtaining a very smooth finish on a metal part.

Horsepower – the standard unit of power rating. In mechanics, one horsepower is equivalent to 33,000 pounds lifted one foot in one minute.

Hot-Rolled – a term applied to commercial steel which has been rolled while hot.

Idler – a machine part in a belt system (may be adjustable) which provides belt tracking and, in some installations, belt tensioning adjustments.

Inclusions – impurities in metal workpieces.

Indexing – a programmed progression of grinding or sanding across a surface. To move the "feed" in steps.

In-Line System – a type of rough lumber sanding system employing belts 14" to 30" wide and running with feed speeds up to 700 FPM. Boards are run generally end-to-end thru an abrasive planer.

Intermediate Grinding – those grinding operations not considered either heavy stock removal nor polishing. Some stock removal present, but primary concern is to remove scratch marks from previous coarse grits. Usually refers to operations using grit 60 through 120.

Intermediate Sanding – dimensioning and/or upgrading the finish of flat furniture stock on bare wood (prior to staining) with wide belts

ISO – International Standards Organization. The organization that establishes standards for a wide range of processes in manufacturing.

Jig – (Not the dance) devices which hold a workpiece in position while it is being machined or assembled.

Jitterbug – a reciprocating or oscillating sander that uses a coated abrasive sheet affixed to a felt or rubber back-up for flat sanding of wood. The most common sheet size is 3-2/3" x 9".

Joint – see Belt Joint.

Joint Angle – the angle of the belt joint in relation to the edge of the belt. Expressed in degrees. Usually 45 to 75 degrees from the belt edge.

Joint Hinging – a condition describing a belt joint that has taken an inward flex (gulled effect) at the point of joining. On lighter weight products, the hinge will pull out under tension. On heavier products, the "hinge" may resist pulling out and could weaken the belt joint and mark the workpiece.

Jumbo Roll – a large roll of coated abrasive product as it is wound after the manufacturing process. Jumbos are then fabricated into finished shapes (sheets, discs, belts, etc.) for industrial and consumer use.

Kiln – a heated drying chamber in which lumber is dried to a specific moisture content, usually 6 to 10%.

Kiln-Dried – lumber whose moisture content has been reduced to a specific percentage by placing it in a heated chamber for a particular length of time. Temperature and humidity are closely controlled during the process.

Lacquer – a tough, fast drying finish that is very common to commercial furniture finishing. Contains very strong solvents. Water-based finishes are becoming more common and are environmentally friendly.

Land – the surface between successive grooves on a contact wheel or roll. The area of the contact wheel that is in actual contact with the workpiece.

Land/Groove Ratio – the ratio of widths of the land to the grooves on a serrated rubber contact wheel or roll.

Lap Joint – coated abrasive belt joints formed by overlapping the two ends of the abrasive material about 3/8" and bonding with adhesive. The abrasive grain must always be removed (skived) from the bottom lap prior to joining (KLINGSPUR joints #1, #2, #5, #6)

Latewood – the portion of the annual growth ring that is formed after the earlywood formation has ceased. It is usually denser and stronger mechanically than earlywood.

Linear Foot – actual length of lumber and wood products regardless of thickness or width.

Line Contact – point at which the workpiece meets the coated abrasive belt on a contact wheel type operation, as opposed to area contact of the workpiece on a platen type application.



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Loading – filling of the spaces between abrasive grains on a coated abrasive product with grinding swarf, resulting in a decrease in stock removal and rate of cut. Loading can be reduced in many woodworking operations by using an open coat or Zinc-stearated product.

Load Meter – another name for an ampmeter. Often found on wide belt sanders to assist in fine tuning the sanding pressure by evaluating the load on the motor.

Long Scratch – scratch pattern (long scratches) exhibited on a workpiece after stroke sanding vs. a short "scratch" from a contact wheel or roll operation.

Machine Room (Furniture) – the area of furniture plant where the rough cut lumber is dimensioned, glued into panels, and machined. The dimensioning portion of this operation is frequently carried out on wide belt abrasive planers.

Maker (Machine) – a machine that manufactures coated abrasive products by combining the backing, adhesive, and abrasive grain.

Making – the process of producing coated abrasive products.

Making Coat – the first adhesive coat which adheres the abrasive grain to the backing of a coated abrasive product, thereby ensuring proper anchoring and orientation of the abrasive grain.

Malleable – a property of metals which allows them to be "workable" or shaped, without damage.

Mandrel – a metal rod or support used to mount QDCs, disc sets, or loose pieces of coated abrasive product, thereby ensuring proper anchoring and orientation of the abrasive grain.

Matte Finish – a dull finish or surface appearance. Same as "satin finish" usually.

Maximum Operating Speed – highest permissible operating speed (RPM) allowed or marked on a coated abrasive disc backup pad or flapwheel.

MDF – "Medium Density Fibreboard" – a high grade manufactured wood panel product, which is somewhat similar to particleboard, but can be effectively shaped or routed. Very common in furniture and wood products industries.

Meters Per Seconds (m/s) – the metric measurement standard for surface speed. $M/s \times 200 = sfpm$. Also see Surface Feet Per Minute.

Micron Size – a unit of measure used to compare abrasive grain, e.g. 1 micron = 0.000039"; grit 320 = approximately 36 microns.

Mil – a unit of measurement equal to .001" (one thousandth of an inch).

Millwork – planed and patterned lumber for finish work in buildings, including items such as sash, doors, conics, panelwork, and other items of interior or exterior trim. Does not include flooring, ceiling, or siding.

Mill Scale – a layer of oxide, black in color, which forms on the surface of hot rolled steel.

Mirror Finish – a shiny, highly-reflective finish on a workpiece. Distortion-free, without flaw. On metal, it is produced by buffing with very fine abrasive compounds.

Mohs Scale – an empirical scale consisting of 10 minerals, with reference to which the hardness of all other minerals is measured. It includes softest mineral (designated 1) to hardest (10): talc, gypsum, calcite, fluorite, opatite, orthoclase, quartz, topaz, corundum, and diamond.

Moisture Content – the amount of water contained in wood, is usually expressed as a percentage of the weight of the kiln-dried wood. Six to eight percent is ideal.

Mold Block – a pre-shaped backup block that is positioned in back of an abrasive belt that will conform to the molding being processed or finished. Blocks can either be held by hand or guided over the straight line molding, or held in a stationary fixture and the operator or sander pushes the molded stock against it. In all cases, the coated abrasive belt is held between the sanding block and the work.

Mold Sanding – sanding and finishing of wood moldings using a mold block and very flexible coated abrasive belts.

Mouldings – long strips of wood which have been shaped to contours for ornamentation.

MRO – Maintenance and Repair Operations



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M.S.D.S. – (Material Safety Data Sheet) – information provided to end users of all types of consumable products which is required by OSHA and EPA. Listed on our web site.

Narrow Belts – coated abrasive products made in belt form up to 12" in width, although usually refers to belts 6" or narrower.

Natural Abrasives – used to differentiate abrasives that occur in nature as opposed to electric furnace type abrasives. Natural abrasives used for coated abrasives are Garnet, Flint, Crocus, and Emery.

Naumkeag Pad – a special coated abrasive item used in shoe manufacturing and repair for sanding the soles of shoes, specifically the arch area. It is a pleated disc in the shape of a mushroom.

Nickel – a silvery-white metal of the iron-cobalt group. Hard, ductile, and malleable. Used to alloy with other metals, and also as a plating metal.

Noseblock – refers to the non-turning, fixed surface contact point on abrasive machinery normally found in woodworking plants. Usually installed in place of the idler pulley on edge sanders. Also called a "bullnose" or "deadhead."

OEM – "Original Equipment Manufacturer." In the abrasives industry, a manufacturer of equipment which uses abrasives.

Offhand Sanding or Grinding – applying the workpiece manually to the moving coated abrasive, as when holding it freehand against an abrasive belt. Also called freehand grinding.

Open Coat – a coated abrasive product in which the abrasive grain covers approximately 50% to 70% of the coated side surface. Helps to retard loading of sticky or gummy materials such as softwoods or paint.

Open Grained Wood – any wood that has a porous or coarse texture. Examples include oak, walnut, hickory ash, poplar, chestnut, and mahogany.

Operating Speed – the speed of a coated abrasive product in use. Usually expressed in either revolutions per minute or surface feet per minute.

Orange Peel – (Not leftovers from eating an orange) a pebble grain pattern that occurs when a metal is stressed beyond its elastic limit. Also refers to a similar pattern that occurs on painted surfaces. Often caused during rolling or forming operations.

OSB – "Oriented Strand Board." A man-made board in which flakes or "strands" are derived from large logs, and oriented in three directionally alternating layers.

Oscillating Sander – a pad type sander with a fastened coated abrasive sheet, which uses a short, high-speed oscillating stroke, producing fast stock removal.

Oscillation Belt – a slight, repetitive lateral movement of a belt on its pulleys. On wide belt machines, it works in conjunction with the automatic tracking mechanisms. In effect, it prolongs belt life and retards premature loading.

OSHA – "Occupational Safety and Health Administration." A government agency.

Oxidation – a corrosion reaction in which corroded metal forms an oxide, usually due to exposure to the oxygen in air. Rust is a form of oxidation.

Pad Sander – a small, handheld machine using coated abrasive sheets fastened to the pad.

Particleboard – a manufactured wood panel product which consists of pressed wood panel particles held together with a resin binder. Not as high quality as "MDF".

Pattern Shop – a shop or department where wooden parts for mold castings are made.

Peck or Pecky (Wood) – can be a pitted area or channel in wood, often found in cedar or cypress.

Peripheral Speed – the speed at which any point on the outside periphery of a rotating tool is traveling when the tool or wheel is revolving. Expressed in surface feet per minute (SFPM) or meters per second (m/s) and determined by multiplying the circumference in feet (or meters) by the wheel or disc revolutions per minute (RPM).

P Grade – European grading system of F.E.P.A. for coated abrasive grain.



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Pickling – (Done without cucumbers) removing surface oxides from steel by chemical means, usually in an acid solution.

Pinch Rolls – a set or series of opposed rolls (usually rubber) which apply pressure to the workpiece to maintain proper feed rate and workpiece alignment during the abrasive grinding process.

Pitch (Wood) – a resin found in many types of softwoods, especially pine. Loads belts.

Pith – the small, soft core occurring near the center of a tree trunk, branch, or log.

Pits – small holes in the surface of a metal, usually caused by corrosion or formed during electroplating.

Planing – see Abrasive Planing, Finish Planing, Rough Planing.

Platen – a flat or shaped support which backs up a coated abrasive belt in the area where the workpiece is applied. Usually metal, the platen may be surfaced with resilient material and a lubricant such as graphite-covered canvas.

Platen Sander – a coated abrasive machine utilizing a platen. The platen provides an area contact to the coated abrasive. Unit pressures are usually low.

Plywood – a composite panel or board made up of cross-banded layers of veneer only, or veneer in combination with a core of lumber or of particleboard bonded with an adhesive. Generally, the grain of one or more plies is roughly at right angles to the other plies, and almost always an odd number of plies is used.

Polishing – act of smoothing off the roughness or putting a high finish on metal by using a fine grit coated abrasive belt. Also refers to the final finishing of bare wood prior to application of finish such as varnish, etc.

Polishing Bar or Head – see Smoothing Bar.

Polyester (Backing) – a synthetic cloth material used as a backing for coated abrasive products. Very tear- and split-resistant.

Poplar – a hardwood with low to medium density. Closed-pored with open, clear grain. Used on many interior parts of furniture, but can be stained and finished to resemble finer grades of wood such as maple or cherry. Very easily sanded. A good paint grade wood.

Porous (Wood) – this term refers to hardwoods only, as all softwoods are non-porous. Most woods are "diffuse porous" because growth is uniform throughout all of the seasons. Oak, however, is "ring porous" since the spring growth is softer and coarser than the summer growth. The pores can be seen without magnification.

Powder Coating – a method of spray painting which used a thick "high solids" paint which is then baked in an oven.

Print Line – refers to a special furniture production line in which fibreboard or other wood products are filled, sanded, and printed with a decorative wood grain or other design.

Profile – refers to the surface configuration of a workpiece, namely, details of grinding surface, finish, flatness, etc.

PSA – "Pressure Sensitive Adhesive." An adhesive applied to the backing of coated abrasive products (usually discs) which permits easy product application and removal to and from a backup pad.

PSI – "Pounds per Square Inch." A unit of pressure equal to the pressure resulting from a force of one pound applied uniformly over an area of one square inch.

Psychrometer – an instrument for measuring the amount of water vapor in the atmosphere.

Pump Drum – inflatable drums made of rubber covered with a canvas boot, used for contour sanding chair stock and related parts. The abrasive cloth sleeve is mounted and the drum is inflated to whatever density is required.

Pump Sleeve – coated abrasive product that is made for mounting on a pneumatic pump drum.

RA – Surface finish measurement which is the "arithmetic average". Measurement of average peaks and valleys of a surface profile. Measured by a profilometer.

Raised Grain – a roughened condition of the surface of a dressed lumber in which the hard summerwood is raised above the softer springwood but not torn loose from it. This condition can occur when using certain types of stain.



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Random Orbit Sander – see DA Sander and Oscillating Sander. (Also called ROS Sander.)

Rayon Backing – a cloth backing material, rarely used, which can be thought of as a cross between cotton and polyester materials. Flexible, and water-resistant. Rayon is a plant-based, synthetic material.

Relative Humidity – ratio of the amount of water vapor present in the air to that which the air would hold at saturation at the same temperature.

Resin – a synthetic adhesive used as bonding coat for coated abrasive products. Much more heat resistant and wear resistant than glue bonds.

Risers – air passages in a casting mold that must be removed (cut off or ground off) after the metal has solidified.

Rolls – a form of coated abrasives (usually in 50 yard or meter lengths) in various widths from 1/2" and wider.

Rotary Sanding – sanding with a rotating disc; as opposed to random orbit sanding.

Rough Lumber Sanding or Rough Planing – refers to the first sanding operation on lumber, after the sawing operation. This operation is to remove rough saw marks, and to bring the stock up to a predetermined thickness. Grits 20, 24, or 36.

Rough Sanding or Rough Grinding – the first grinding operation for reducing stock rapidly without regard for the quality of the finish.

RPM – Revolutions per minute. Machine speed.

RTA – "Ready to Assemble." Furniture which is assembled from kit form by the customer.

Rubbing – the final phase of furniture finishing in which the part surface is "rubbed" by machine or hand to give the required lustre or polish.

Sanding Room – designates a department in a furniture plant that is devoted primarily to machine sanding of dimension stock prior to assembly.

Sapwood – the lighter-colored wood growing between the heartwood and bark.

Satin Finish – a smooth but not highly reflective surface to ensure against scratching of soft materials. Normally refers to a metal or a finished wood surface only.

Scalloped Edge Belt – a special slitting of narrow belts so that the edges are scalloped (also called serrated). This is done to reduce the likelihood of cutting or marking of the workpiece from a standard, straight belt edge. J-Flex material is the most common material to be scalloped. The belt normally will be slightly wider than the contact wheel. Also used for slack-of- belt operations.

Scored Rolls – coated abrasive roll material with parallel slits evenly spaced in the length direction. Used for making assemblies. Also called "slashed" rolls.

Sealer Coat – a coat of finishing material (generally nitrocellulose in nature) designed to close the pores on wood and promote adhesion of subsequent finishing materials. Sealers are clear coatings which seal the filler or stain, and prevents them from bleeding through after the finish coats are applied.

Sealer Sanding – removing the roughness or surface impurities from the sealer coat surface prior to the finish lacquer coat.

Segmented Belt – a wide abrasive belt which is wider than the manufactured width of the jumbo roll material. This belt must have more than one joint.

Serrated Contact Roll or Wheel – contact roll or wheel with grooves milled into the face to increase the cutting action of the coated abrasive belt and prolong belt life.

Serration – grooves cut into a contact wheel or contact roll which increase the cutting action of the abrasive belt, and improve belt life and performance.

SFPM – Surface feet per minute. The measurement of the speed of a specific point on a wheel or belt.

Shedding – term used to denote the loss of abrasive grain from a product during the grinding process by means other than attritive wear. Also called "Shelling" or "Stripping."

Shelling – see Shedding.



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Shoe – technically referred to as a platen or smoothing bar. A flat metal support located behind the coated abrasive belt. Frequently faced with felt or vinyl foam tape to provide resiliency. Also refers to devices in a wide belt sander which hold down small parts as they go through on the conveyor belt (see Pinch Rolls).

Shore Durometer – a method of rating the hardness of rubber, plastic, or other material. See Durometer.

Short Scratch – generated by a contact roll application, as opposed to a stroke sander or platen type operation which produces long scratches.

Side Stroke – another name for an edge sander.

Silicon Carbide – an abrasive made from coke and silica sand. Very sharp and hard abrasive. Used for sanding softwoods, painted or otherwise finished surfaces, rubber, plastic, non-ferrous metals and other types of materials. Cuts very well under light pressure. Normally black in color.

Size Coat – second adhesive coat applied to a coated abrasive product. The "size" coat unites with the maker coat insures the final anchoring of the grain and proper total adhesive level to the finished product.

Sizing – see Glue Size.

Skive – refers to the grain removal and taper operation performed on both laps (ends) of coated abrasive belt prior to joining the two laps necessary in order to achieve adequate joint adhesion and desired joint thickness. KLINGSPOR skived joints include #1, #2, #5, and #6.

Slack of Belt Sander – a machine configuration in which the workpiece is presented to the coated abrasive belt in the area between the two pulleys. Work applied to unsupported area of the belt.

Slashed Roll – see Scored Roll.

Slotted Discs – coated abrasive discs containing numerous radial slot cuts from the outside periphery. Also called "DeLappe discs," or wing discs.

Smearing – black residue on the workpiece caused by a non woven abrasive product melting onto the workpiece due to excessive heat.

Smoothing Bar – a platen type device backing up the coated abrasive belt at the point of contact with the workpiece. Usually covered with graphite canvas to reduce frictional heat. Used on wide belt machines in woodworking, particleboard, and plywood sanding to promote better finishes. Also called platen bar, shoe, or polishing bar.

Snakemarks – "S" shaped streaks on parts, usually in wide belt sanding; any streaking on a wood workpiece, with a snake or serpentine appearance due to the normal oscillation of a wide belt sander.

Softwood – the non-porous wood of any cone-bearing, needle-leaved tree, regardless of whether the wood is in fact hard or soft.

Spanner Wrench – a "pin wrench" which has two pins which lock into two corresponding holes on a holding nut on a grinding disc or fire disc.

Spatter – residue from welding consisting of small drops of hardened metal on the workpiece surface.

Specialties – coated abrasive forms other than sheets, rolls, belts, and discs. Includes assemblies and flapwheels.

Spindle – see Arbor.

Spool Sanding – sanding convex or concave profiles on curves such as mirror frames, headboards, and other compound shapes. Normally uses 16" wing discs (16 slits) in various diameters. Can be mounted horizontally or vertically.

Stearated – see Zinc Stearate.

Straight Line Sanding – refers to a simple reciprocating type hand sander as opposed to a sander employing orbital motion. Creates best possible finish on wood.

String Sander – see Variety Sander.

Stripped Grain – see Shedding.



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Stroke Sander – a machine that makes sanding contact by "stroking" the back of a moving coated abrasive belt with a backup block or pad. Essentially, these machines consist of two or more pulleys over which the coated abrasive belt travels, a table which supports the workpiece, and means for applying pressure and movement along the belt.

Sueding – refers to the process of producing a velvet finish on the flesh side of leather or cloth.

Surface Conditioning – cleaning, deburring, and smoothing sharp grit lines on metal. Normally uses non woven abrasives or wire brushes. Does not remove any metal (or very minute amounts) in this process.

Surface Finish – the quality of a workpiece finish expressed in RMS (for metal finishes only) or other quantifiable or subjective measure.

Swirl Marks – grinding marks or scratch pattern left by rotational type tools such as disc sanders.

Tail – to unload parts from wide belt sander.

Tempering – a heat treatment to metal or glass to decrease hardness, but increase toughness.

Tensile Strength – the maximum stress a material can withstand without breaking when subject to a stretching load. Usually expressed in p.s.i.

Tension – the condition of a coated abrasive belt that is stretched between two points on a sanding machine (under tension); the force exerted by the coated abrasive belt on a support.

Tensioning Cylinder – a method or apparatus for supplying continuous tension to a coated abrasive belt during use. Usually air operated.

Thermosetting Resin – a resin characterized by a state which remains hard even if subjected to additional heating. Most resin abrasive bonds are thermosetting.

Titanium – an exotic metal used extensively in aerospace applications. It is very lightweight, yet as strong as steel. Titanium is also very corrosion and temperature resistant. Dull gray in color.

Tolerances – the permissible variations in the dimensions of machine parts or the permissible deviation from a specified value in a manufacturing specification or procedure.

Top Coat – a transparent surface coating for wood, varnish, lacquer, shellac, wax, Danish oil, etc. Varnishes and shellacs are often sanded between coats.

Torn Edge Belt – a coated abrasive belt fabricated with one belt edge torn lengthwise and joined along a warp thread to ensure straight tearing of subsequent narrower belts when they are ripped. Using the torn edge of the original belt as a starting point, narrower width belts can be ripped in succession across, until the original belt is used up. Normally used for mold sanding applications.

Tracking – the act of adjusting the idler pulley in a coated abrasive belt system so that the belt is properly aligned on the contact wheel.

Truing – the procedure used to restore flat surface to a contact wheel or platen.

Tumbling – an operation for deburring, breaking sharp edges, finishing, or polishing in which abrasive, water, and the work pieces are "tumbled" in rotating or vibrating barrels.

Vacuum Disc – a PSA disc which has holes punched in a pattern which correspond to vacuum inlet holes on special dust-free sanders.

Variety Sander – a belt sander for sanding small parts on either the slack-of-belt, stationary platen, or contact wheel methods. Usually consists of a drive wheel, one or more idler wheels, and a contact wheel or platen. Uses long, narrow abrasive belts. Sometimes called a string sander.

Veneer – thinly sliced sheets of wood used to cover a base wood, particleboard or MDF. Usually used for decorative purposes.

Veneer Tape – strips of gummed paper used to hold the edges of veneer together at the joints prior to gluing.

Vitrified – a bonded abrasive produced under extremely high temperatures in a kiln. Uses a "clay bond" or ceramic bond, rather than a resinoid bond. Our mounted points are vitrified.

Vonnegut Assembly – see Assemblies.



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Vonnegut Wheel – a brand name for brush-backed wheels containing a loading of coated abrasive strips. Used to sand contoured workpieces. Also called a "Wolf Head."

Waferboard – a type of man-made board composed of relatively large, thin chips of hardwood which are bonded together with resin. Used for exterior sheathing and decorative covering.

Wash Coat – a very light coat of finishing material primarily adding depth to the color of furniture after staining. The solution is sprayed on and requires light scuffing with coated abrasives.

Water Solutions – coolants of water plus rust and corrosion inhibitors, or wetting agents. Normally used to wet grind on steels.

Whitewood Sanding – refers to the sanding of bare, unfinished wood. Also called wood-in-the-white.

Wide Belts – coated abrasive products made in belt form with widths 18" or wider.

Wild Grain or Scratch – a random, deep scratch; usually intermittent. Caused by contamination of the belt or workpiece, or a defective abrasive belt.

Wing Discs – see DeLappe Discs.

Wolf Head – see Vonnegut Wheel.

Wrought Iron – iron which has had most of its carbon removed. Very workable, not brittle like most other irons.

Zinc Stearate – a dry lubricant added to the surface of coated abrasives (usually sheet or disc goods) which prevents loading of soft materials such as paint and other finishes. Normally white-gray in color.

Zirconium – see Alumina Zirconia.