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**ANGLEŠKI SLOVAR STROKOVNIH IZRAZOV S
PODROČJA POVRŠINSKE OBDELAVE**

GLOSSARY OF PAINT AND COATINGS TERMINOLOGY

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Abrasion resistance	<p>Ability of a coating to resist being worn away and to maintain its original appearance and structure when subjected to rubbing, scraping, or erosion. (3)</p> <p>Resistance to being worn away by rubbing or friction. Abrasion resistance is a matter of toughness, rather than hardness. It is a necessary quality for floor finishes, enamels and varnishes. (2)</p> <p>Resistance to being worn away by rubbing or friction; related more to the durability than to the hardness of a paint or coating. (4)</p> <p>Ability of a coating film to resist the impact and friction caused by abrasives. (1)</p>
Abrasive	Substance that is suitable for carving and eroding due to its hardness and shape. Used to smooth bare wood or basecoat before coating. (1)
Abrasive blast-cleaning	The impingement of a high-kinetic-energy stream of a blast-cleaning abrasive. (10)
Accelerated weathering	Artificial or accelerated aging of coated wood using special cabinets (i.e. Xenotest, UVcon, etc.) which reproduce the conditions of natural outdoor exposure (i.e. UV light, rain). (1)
Accelerator	A substance which, added in a small quantities to a coating material, accelerates reactions, for example a crosslinking reactions. (8)
Acid cured coatings	see COATINGS (1)
Acrylic	<p>A resin resulting from the polymerization of derivatives of acrylic acids, including esters of acrylic acid, methacrylic acid, acrylonitrile, and their copolymers. Acrylics are also used in powder coatings in their thermoplastic form. (3)</p> <p>A synthetic resin widely used as a latex to produce paints with good colour and colour retention. Acrylic latex paints may be thinned and cleaned up with water. Breeze interior and exterior latex paints in flat, eggshell and semi-gloss are all based on pure acrylic emulsions. (2)</p> <p>Synthetic resin used in high-performance paints and coatings. A paint or coating in which the binder contains acrylic resin. (4)</p> <p>A polymer containing short chain esters of acrylic and methacrylic acid. (12)</p>
Acrylic coatings	see COATINGS (1)
Active solvent	A liquid which dissolves a binder. (3)
Additive	Any substance, added in small quantities to a coating material, to improve or modify one ore more properties. (8)
Additives	Any substance added in small quantities to another substance, usually to improve properties. Examples of additives include plasticizers, fungicides, and dryers. (3)
Adhesion	<p>The degree of attachment between a coating film and the underlying paint or other material. (2)</p> <p>The ability of a paint or coating to stick to or attach to a surface and remain fixed for a period of time without blistering, flaking, cracking, peeling or being removed by tape. (4)</p> <p>The firm attachment of a coating to a substrate or another coating. (5)</p> <p>Resistance exhibited by a dry coating film against the action of detaching it from the wood surface or from an underlying coat of coating. For good adhesion the underlying surface should be chemically clean and not too smooth or hard. (1)</p>

	The force that makes two materials stick together. When paint bonds with paint, it is called intercoat adhesion. Epoxies have great adhesion to most surfaces. (12)
Adhesive	A substance capable of holding materials together by surface attachment. Various descriptive adjectives are used with the term adhesive to indicate certain characteristics: physical (liquid adhesive, tape adhesive), chemical type (silicate adhesive, resin adhesive), materials bonded (paper adhesive), and conditions of use (hot-set adhesive). (3)
Adhesive strenght	The sum total of the forces of attachment between a dry film and its substrate. (8)
Aerosol	Use of compressed gas to spray the product from its container. (2)
After tack	The property of a film to remain sticky after normal drying or curing. (9)
Ageing	Irreversible changes in the properties of a film which occur with the passage of time. (7) (9)
Ageing atmosphere	Atmosphere where the test unit is placed at least four weeks before testing (conditioning could be included). (6)
Agglomeration	Small particles of pigments gathering together forming a larger mass. (12)
Air dry	When a coating dries at normal room temperature, usually between 60-80 degrees F with a relative humidity between 40-60 percent. (12)
Air knife	A slotted jet of compressed air acting as an effective air knife to quickly blow superfluous water from parts, often before they enter a dryoff oven. (3)
Air spray	A paint spray application system using air at high velocity and pressure to atomize the paint. (3)
Air turbine	Electric motor driven fans that create volumes of relatively low-pressure atomizing air for spraying. Their output is referred to as turbine air. (3) An air-driven precision fan that is used to spin a paint atomizing disk or bell head. (2)
Air-assisted airless spray	Paint spray application system using fluid pressure to atomize the paint and lower pressure air to adjust the shape of the fan pattern. (3)
Air-bearings	A stream of air used to support a spinning shaft. Air bearings have limited load carrying capacity but require no lubricants. (3)
Air-dried coatings	Coatings which are not heated above 194 °F (90 °C) for coating or drying. In the South Coast Air Quality Management District, curing also must be done below (rather than at or below) 194 °F (90 °C) to qualify as air dried. Air-dried coatings also include forced-air dried coatings. (3)
Air-dryers	Used to remove moisture from compressed air. Dryers have three basic styles of operation (3): <ol style="list-style-type: none"> 1. deliquescent types have disposable drying agents and tend to be marginally effective for painting; 2. refrigerated dryers cool the air to condense out the water. Most paint systems use this type; 3. desiccant types have a double bed dryer and are able to achieve the lowest dew point air. The beds are alternately on-stream and back-flushed to regenerate their moisture absorbing qualities. Some plants with critical finish requirements use this style of dryer to reach dew points of -40 °F.
Airless	see SPRAY GUNS (1)
Airless spray	Paint spray application system using high fluid pressure to atomize paint by forcing it through a small orifice. (3) Method of forcing coating through a spray tip by hydraulic pressure rather than air. (12)
Airless spraying	The process of atomizing paints and coatings by use of hydraulic pressure rather than air pressure. The paints and coatings are pressurized between 1,000 – 3,000 psi, then forced through the small opening of a spray tips. (4) The process of atomization of paint by forcing it hydraulically through an orifice at high pressure. (10)

Airmix	see SPRAY GUNS (1)
Aliphatic solvent	A solvent comprised primarily of straight chain hydrocarbons, including mineral spirits, kerosene, and hexane. These solvents are characterized as volatile organic compounds. (3)
Aliphatics	Non aromatic straight-chain or branched hydrocarbons. When aliphatic substituents are introduced in film-forming polymers used in coatings, an improvement in certain characteristics of the dried film (such as light fastness) is normally observed while drying time may be increased. (1)
Alkali	Any substance that neutralizes acids. Alkalis are helpful in aqueous cleaning by speeding soil removal and suspension. Alkali is synonymous with caustic. (3) A substance such as lye, soda or lime that can be highly destructive to paint films. (2)
Alkyd	A binder based on resins formed by the condensation of polyhydric alcohols with polybasic acids. They may be regarded as complex polyesters (thermoset). (3) A synthetic resin widely used in the manufacture of paints and varnishes. Alkyd paint must be thinned and cleaned up with solvent or paint thinner. The terms alkyd paint and oil-based paint are generally used interchangeably. (2) Synthetic resin modified with oil (alkyd oil) that exhibits good adhesion to clean surfaces, good gloss and color retention, moisture resistance and flexibility. Typical paints and coatings that contain alkyd resins are thinned or reduced with mineral spirits. (4) Synthetic resin made by the reaction of phthalic anhydride with polyhydric alcohol (forming a polyfunctional saturated polyester) and modified with fatty acids or oils. According to the quantity of oil introduced (“oil length”) alkyds can be classified as (1): - short oil alkyds - medium oil alkyds - long oil alkyds The former are used in two-pack polyurethane coatings as binders in part A (to be reacted with isocyanates, which are included in part B). The latter are commonly used in exterior grade one-pack coatings, which are often referred to as “alkyds”. (1) A resin formed by the reaction of alcohols and acid groups. They may be regarded as complex esters. They are widely used as resins in primers. (12)
Alligatoring	Paint film cracking that makes the surface look like alligator skin. (2) A condition of a paint film where the surface is cracked and has the appearance or pattern similar to that of the hide of an alligator. Common causes include intercoat adhesion, solvent entrapment and excessive coats of paint. (4) Paint failure that resembles an alligator’s hide. Usually caused by applying a hard-drying paint over a soft paint or by applying the film too quickly. (12)
Aluminum paint	A paint that includes aluminum particles and gives a metallic finish when dried. (2)
Aluminum pigments	Non-leafing aluminum paints are usually colour finished with flakes of aluminium. (12)
Ambient temperature	The usual, or surrounding, environmental conditions. (5)
Amino resins	Resins used to crosslink polyesters, epoxies, acrylics, and alkyds to enhance their durability. (3)
Amperes (amps)	An electrodynamic unit of measure for the quantity of current in a steady electric flow. (3)
Anode	The electrode at which chemical oxidation takes place. In electrodeposition (E-coating), the anode is indicated on diagrams by the positive (+) marking. (3)
Anodizing	The treatment of aluminium by an electrolytic oxidation process to produce a coat consisting mainly of aluminium oxide. (10)
Anolyte	The water used to flush solubilizer molecules that form inside an electrocoating anode box. If used to flush a cathode box, it is termed catholyte. (3)
Anomalous flow	Type of flow exhibited by a material in which, at a constant temperature, the ratio of the shear stress to the velocity gradient varies either with time or with rate of shear. For

example, with so-called thixotropic materials, stirring or other such mechanical disturbance immediately before test will reduce the flow time below that for an unstirred sample. With such materials, uncertain and variable values for flow time are obtained in all flow cups. (13)

- Anti-corrosive paint** A paint used to protect metal substrates against corrosion. (10)
- Antique stain** Stains which are applied onto basecoats and rubbed away with scotch brite or wire wool, in order to produce special effects of shading into molded or grooved areas, giving an antique look to the piece of furniture. Sometimes referred to as PATINA or GLAZE. (1)
- Application methods** They are usually chosen according to the shape of the items to be coated and the type of coating to be applied. Some of the most common ones are listed below: (1)
- FLOW COATING
 - SPRAY (see SPRAY GUNS)
 - FRENCH POLISHING (see PAD)
 - DIPPING
 - CURTAIN COATER
 - ROLLER COATER

The following table gives a rough indication on the relation between application method, type of coating and shape of the items to be coated.

	FLAT PANELS	FITTED FURNITURE	TURNED PARTS
STAIN	spray, sponge, brush, roller	spray, sponge, brush	spray, dipping, flow coating
BARRIER	spray, rag, brush, roller coater	spray, rag, brush	dipping, spray
BASECOAT	spray, brush, roller coater, curtain coater	spray, brush	spray
TOPCOAT	spray, brush, roller coater, curtain coater	spray, brush	spray

- Application rate** The quantity of a coating material that is required to produce, under defined working conditions, a dry film of given thickness on unit area (e.g. l/m² or kg/m²). See also SPREADING RATE. (8)
- Application weight** Quantity of wet coating applied on the substrate, usually expressed as g/m². (1)
- Aromatic solvents** Hydrocarbon solvents which contain an unsaturated ring of carbon atoms, including benzene, naphthalene, anthracene, and their derivatives. Toluene (toluol) and xylene (xylol) are commonly used aromatics. These solvents are characterized as volatile organic compounds (VOCs). (3)
- Hydrocarbon solvents with a benzene ring nucleus such as xylol or toluol. (12)
- Aromatics** Name used to distinguish substances containing an aromatic ring (the benzene nucleus). Aromatic substituents give to film-forming polymers used in coatings properties roughly opposite to the ones given by aliphatics substituents. (1)
- Arris** A sharp edge at the meeting of two surfaces at an angle with one another. (23)
- ASTM** Acronym for the American Society for Testing Materials, which publishes extensive standards used widely in manufacturing. (3)
- American Society for Testing and Materials, the source for voluntary standards for materials, products, systems, and services. (5)
- Atlas (xenon arc) weather-ometer** An accelerated test which simulates the effects of weathering through the use of a filtered xenon arc light source (ASTM G 26, Method A). (5)
- Atomization** The formation of tiny liquid droplets during the spraying of coatings. (3)

Autoclave	A piece of equipment used to apply superheated steam under high pressure; commonly used for the sterilization of instruments in the medical field or for testing materials which will be subjected to high temperature/high pressure applications; results may vary based upon test conditions. (5)
Autodeposition	Dip-coating application method which depends on a chemical reaction to plate out the coating film. (3)
Autodeposition (autophoretic)	A precipitation reaction of an organic resin that occurs by the action of an acid etching a metallic substrate. The ions of the oxidized metal codeposit with the vinyl emulsion resin in the autodeposition coating process. (3)
Azeotrope	A liquid mixture that distills without change in composition and characterized by a constant minimum or maximum boiling point which is lower or higher than any of the components. (3)
Back ionization	An excessive buildup of charged powder particles during electrostatic application which limits the ability of additional powder to be deposited onto the substrate; can neutralize the electrical charge of subsequently sprayed powder particles. (5)
Back priming	Applying a coat of paint to the back of woodwork or exterior siding to prevent moisture from entering the wood and causing the grain to swell. (2) The application of a paint or coating to the back side or non-exposed surface of woodwork and exterior siding to prevent moisture from entering the wood. (4)
Bactericide	Chemicals usually added to water-based products to prevent rotting caused by bacteria. (1)
Baked coatings	Coatings that are cured or dried at or above an oven air temperature of 194 °F (90 °C). (3)
Baking	See STOVING. (8) Hardening a coating by oven drying or exposing to high temperatures. Some coatings are improved by baking and some will not dry without baking. Baking temperature is the prescribed heat for curing any particular coating. (12)
Baking temperature	See BAKING. (12)
Barrier	Type of basecoat applied onto bare or stained wood as the first coat, with the following purposes (1): <ul style="list-style-type: none"> - it may prevent the migration of substances contained in the substrate (especially exotic timbers) which could adversely affect the characteristics of the upper coats (i.e. discoloration, loss in drying properties, etc.) - it may protect the underlying substrate and/or stain from yellowing caused by UV light - it may protect the stain from color variations which may be caused by certain basecoats (i.e. polyesters or acid curing) - it may improve and promote the adhesion of the whole coating system to items which are difficult to coat (i.e. melamine papers, plastic laminates, etc.)
Barytes	Colorless crystalline solids that are a form of barium sulfate (also called barite). Barytes are used as an extender pigment in primers and coatings. (3)
Base	Tint base. (2)
Basecoat	Intermediate coating which has to be applied onto bare timber (which could also be already stained or coated with barrier), before the final coating stage (top coat). Multiple coats can be applied according to the desired final appearance (open or closed pore). Good flow into wood pores and easy sandability are the main characteristics of this type of coating. They can be clear or pigmented. Other terms used to describe the basecoat are PRIMER, FILLER, SEALER, UNDERCOAT. (1) A highly pigmented colour coat applied prior to a clear coating that gives the system the desired colour. (12)
Batch	A unit of production. May be measured by the size of a special order or limited to the capacity of the equipment. (12)

Bells	A rotating head that is shaped to deliver paint forward in a circular pattern. The bell may be directed at any angle and be moved on robots or reciprocators, just as spray guns are. (3)
Bentonite	A type of clay derived from volcanic ash and used as a paint pigment. (3)
Binder	<p>The solid (non-volatile) material in a coating that binds the pigment and additive particles together to form a film. In general, binders are resins. (3)</p> <p>Film-forming ingredient that binds the particles together in a paint. (2)</p> <p>The resin portion of a paint or coating. The binder holds the pigment particles in suspension and attaches them to the substrate. The type and amount of binder determines the paint or coating's performance properties such as washability, adhesion, durability, colour retention, etc. (4)</p> <p>Solution or dispersion of resin in a solvent or water. This is usually added to stains, in order to enhance certain characteristics (i.e. pore marking), to prevent overabsorption and to allow denibbing of the stain. (1)</p> <p>The non-volatile part of the medium which forms the film. (8)</p> <p>The non-volatile, film-forming liquid usually an oil, alkyd, latex, varnish or plasticizer which binds the pigment particles together in paint. (12)</p>
Biocide	A chemical agent capable of killing organisms responsible for microbial degradation. Biocides are sometimes added to waterborne coatings. (3)
Bituminous coating	An asphalt or tar compound used to provide a protective finish for a surface. (3)
Blast-cleaning abrasive	A solid material intended to be used for abrasive blast-cleaning. (10)
Bleaching (of wood)	Treatment which is usually carried out by means of hydrogen peroxide and ammonia, in order to eliminate dark stains and spots and to lighten the colour of wood. (1)
Bleeding	<p>Discoloration that occurs when colorants from a lower surface coat diffuse into a surface coat. (3)</p> <p>The diffusion or staining of color through a topcoat of paint or coating from underlying surfaces. (4)</p> <p>Phenomenon which occurs when the dyes of a stain are redissolved by the basecoat applied on it, leaving dark spots on the surface, especially near the wood pores. A non-bleeding colour is one which is not soluble in coatings used over it. (1)</p> <p>The process of diffusion of a coloured substance into and through a film from beneath, thus producing an undesirable staining or colour change. (9)</p> <p>Discolouration of a coating by diffusion of natural timber extractives, or previous coatings such as bitumen based products. (23)</p>
Blistering	<p>The formation of hollow bubbles in the paint film caused by air, moisture, or solvents trapped under the film. (3)</p> <p>The forming of bubbles or pimples on the painted surface. Blistering is caused by moisture in the wood, by paint having been applied before the previous coat was dry, and by excessive heat during or after application. (2)</p> <p>Bubbles or pimples formed on the paint film. Common causes are moisture in the substrate, solvent entrapment, excessive heat or surface contamination. (4)</p> <p>Small blisters which appear during drying if solvent or air are trapped in the film, or if chemical drying is inhibited by substances contained in the substrate. (1)</p> <p>The convex deformation in the film, arising from the local detachment of one or more of the constituent coats. (9)</p> <p>Pressure under the paint film from vapour or moisture will cause blistering. The vapour may come from trapping solvents or from chemical reaction. (12)</p>
Blocked isocyanates (blocking agent)	Isocyanates, normally extremely reactive with water, can only be used in waterborne coatings if they can be prevented from reacting before the water is baked out of the paint film. This is done by capping or blocking the isocyanate group with a thermally decomposable chemical. In a bake oven, the water evaporates, the chemical cap decomposes and the isocyanate crosslinks the paint. Blocked isocyanates are often

	employed for E-coat curing. (3)
Blocking	<p>Undesirable sticking together of painted surfaces when pressed together under normal conditions. Sticking or blocking can be reduced by anti-block paint additives. (3)</p> <p>The sticking or adhering of two painted surfaces when they come in contact with each other. (4)</p> <p>Phenomenon which occurs when two coated and completely dry surfaces in direct touch stick together due to combined effect of heat and thermoplasticity of the coatings used. A typical case occurs with waterborne coatings applied, for example, on window frames exposed to extremely hot weather. The blocking tendency can be reduced by adding specific crosslinking agents. (1)</p> <p>Unwanted adhesion between two painted surfaces when they are left in contact under load after their specified drying period. (7)</p> <p>The formation of a deposit on the surface of the film. (9)</p> <p>Unwanted adhesion between adjacent surfaces of articles that develops when these surfaces are left in contact. (23)</p>
Bloom	A bluish cast forming on the surface of some films. It may be caused by foreign materials such as smoke, oil or dust, during the drying process. (12)
Blooming	<p>Powder-like deposit forming on the surface of the film, often resulting from partial dissolving and redepositing of pigment by a solvent component. (3)</p> <p>A haziness or whitening that develops on paint surfaces usually caused by moisture condensing on or being trapped under the paint film during application. Also known as blushing. (4)</p> <p>A haze on the surface of a coating which can be easily removed. (5)</p> <p>May have several causes (1):</p> <ul style="list-style-type: none"> - absorption of moisture during drying - partial detachment of the coating film from the substrate - incompatibility of the coating. <p>A hazy bloom to the coating surface, much like the bloom on a grape. Often associated with a reduction in gloss level. (23)</p>
Blue stain in service	Surface staining of timber in service by fungi causing blue to black discoloration often causing disruption of surface finishes. (7)
Blushing	<p>Whitish, milky area that develops on the film and may be caused by absorption of water vapour by the drying film. (3)</p> <p>A gloss film turning flat or a clear lacquer turning white. Blushing is usually caused by moisture condensation during the drying process. (2)</p> <p>A milky opalescence that sometimes develops as a film of lacquer dries, and is due to the deposition of moisture from the air and/or precipitation of one or more of the solid constituents of lacquer. (9)</p> <p>Usually caused by condensation during the drying period. The film becomes cloudy translucent. (12)</p>
Body	<p>The thickness or thinness of a liquid paint. (2)</p> <p>A work used to indicate thickness or thinness of a liquid paint. A more acceptable term is viscosity or consistency. (12)</p>
Bonderizing	A registered trademark of a chemical process for phosphate-coating iron, steel or zinc surfaces as a rust preventing base for painting. (12)
Bonding	Attachment between a coating film and the underlying material to which it is applied (substrate or previous coat). (1)
Bounce-off, bounceback	Paint droplets from air-atomized application that rebound or bounce away from the surface due to the blasting effect of the air. (3)

Boxing	<p>Mixing paint by pouring from one container to another several times to ensure thorough mixing. (2)</p> <p>The process of mixing paints and coatings together by pouring from one container to another. Contractors will box material in the field to help verify color and sheen uniformity. (4)</p> <p>The act of pouring paint from one container into another repeatedly, not only for mixing, but to insure uniformity. (12)</p>
Breathable paints	<p>Paints that allow the passage of moisture vapour through the paint film. Also see PERMEABILITY. (4)</p>
Breathe	<p>Permit the passage of moisture vapour through a paint film without causing blistering, cracking or peeling. (2)</p>
Bridging	<p>The ability of paints and coatings to span small cracks or gaps through cohesion and elastic properties. (4)</p> <p>Ability of a coating to span small gaps, pores or cracks through its cohesion and elastic qualities. (1)</p> <p>This refers to the ability of paint to span small gaps or to cover cracks through its elastic qualities. This is a desirable quality for some coatings and is so formulated. It is not desirable in coatings for screens and acoustical tile. (12)</p>
Bristle brush	<p>A paint brush with filaments made up of animal hair strands usually hog hair. Bristle brushes are used for alkyd paint. Build Thickness or depth of paint film when dried. (2)</p>
Brittleness	<p>The tendency of a coating film to crack or snap when subjected to deformation. (3)</p> <p>Tendency of a dried film to crack or flake when bent or scratched. Synonymous with lack of elasticity. (1)</p> <p>The condition of a film having such poor flexibility that it disintegrates easily into small fragments. (9)</p> <p>Easily cracked or flaked when bent. (12)</p>
Bronzing	<p>The change in the colour of the surface of the film giving the appearance of aged bronze. (9)</p>
Brush	<p>Manual paint application tool composed of bristles set into a handle. (1)</p>
Brush coating	<p>Manual application of coatings using brushes and rollers. (3)</p>
Brush marks	<p>Small ridges produced in paint films by the bristles of brushes. (3)</p> <p>The appearance of ridges and valleys in the dried film of paint. Common causes are poor application tools or techniques, insufficient film build or dry time between coats and application over an extremely porous substrate. (4)</p> <p>See ROPINESS. (9)</p>
Brush rollers	<p>Cylinders with a central axis to which filaments of different nature are fixed. Brush rollers with soft fibers are used to remove excess wet stain and to press the stain into the pores. Abrasive brush rollers made of nylon are used to sand stains and primer coats. Brush rollers for polishing of polyurethane and polyester coatings consist of cylinders covered with tightly tied cloth rings. (1)</p>
Bubbling	<p>The formation of temporary or permanent bubbles in the applied film. (9)</p> <p>Air bubbles in a drying film caused by excessive brushing or vigorous stirring just before applying. When they break, they may form pinholes in the film. (12)</p>
Buffing	<p>Operation carried out by means of suitable devices made of cloth or fiber, to remove dust particles from the items. (1)</p>
Build	<p>see SOLIDS CONTENT. (1)</p> <p>The visual impression of the thickness of a dried film. Classification by build shall be based on the measurement of dry film thickness by the following categories (7):</p> <ul style="list-style-type: none"> - minimal: mean thickness less than 5 μm;

- low: mean thickness 5 μm up to 20 μm ;
- medium: mean thickness greater than 20 μm up to 60 μm ;
- high: mean thickness greater than 60 μm .

Bulk coating	The painting of large masses of small unchangeable parts by a variety of possible techniques, such as dip-spin and dipping. (3)
Bung hole	A threaded opening near the bottom of a keg or drum in which a spigot can be inserted. (12)
Burning off	The removal of a coating by a process in which the film is softened by heat and then scraped off while still soft. (10)
Burn-off ovens	A paint-stripping method accomplished by combustion of the coating in gas-fired burn-off ovens in which upper temperatures are controlled by injection of water spray into the oven. (3)
Calcimine	A type of paint composed essentially of calcium carbonate or clay and glue that was commonly used as a finish on plaster. (4)
CARC	Chemical Agent Resistant Coatings. The polyurethane-based coatings are highly crosslinked to resist chemical attack. CARC is often used on military equipment that might become contaminated by nuclear, biological, or chemical substances. (3)
Carnauba	A yellowish or greenish wax obtained from the young leaves of the Brazilian wax palm tree. It is used in various waxes and polishes. (12)
Casein paints	A type of paint which included casein (protein derived from milk) is used as the binder. (4)
Cat eye	Description of a hole or holiday in a paint or coating film shaped like a cat's eye. Also known as cratering and fish-eye. Common causes are solvent or air entrapment. (4)
Catalyst	An ingredient that speeds up a chemical reaction. Catalysts are sometimes used in two-component epoxy systems. (2) The activator which chemically accelerates the rate of reaction in a coating. Two-component products such as epoxies and aliphatic urethanes require the use of a catalyst to solidify the paint film. Also known as curing agent, hardener, converter, accelerator. (4) An additive that causes chemical change, but is not permanently affected by the reaction. For instance, the addition of dryers speeds up the oxidation of oils. (12)
Cathode	The cathode is defined as the electrode at which chemical reduction takes place. In electrodeposition (E-Coating), the cathode is indicated on diagrams by the negative (-) marking. (3)
Caulk	A flexible (semi-drying or slow-drying) mastic compound used to seal joints or fill crevices around windows, chimneys, etc., prior to or after painting. (2)
Caulking gun	A tool for expelling caulk from a tube. It enables a »bead« of material to be applied to cracks and seams. (2)
Caustic	A substance that neutralizes acids. Caustics are helpful in aqueous cleaning by speeding soil removal and suspension. Caustic is synonymous with alkali. (3)
Cellosolve	The generic term for the solvent family of mono-alkyl ethers of ethylene glycol. For example, a widely-used solvent is butyl cellosolve, which chemically is ethylene glycol monobutyl ether. (3)
Centrifugal coater	See dip-spin coater (3)
Chalking	The degradation of a paint film by gradual erosion of the binder, usually due to weathering. Loose powder forming on the surface of a paint after exposure to the elements. (2) The formation of a powder on the surface of a paint or coating film caused by the deterioration of the binder in the product. Chalking paints are also known as self-cleaning paints. (4) Degradation of a coating due to UV exposure, which results in loss of color and gloss. (5) Condition which occurs when a loose powder, derived from the film itself, is formed on the

surface of a dried film or just beneath the surface. It is caused by the deterioration of the binder and is usually observed on outdoor exposure. (1)

The appearance of a loosely adherent fine powder of the surface of a film arising from the degradation of one or more of its constituents. (9)

Checking

Slight breaks in the film that do not penetrate to the substrate surface. If the substrate surface is exposed it is called cracking. (3)

Formation of small cracks in the film of paints and coatings. Checking commonly occurs when a paint film loses its elasticity, most often due to age. (4)

A kind of paint failure in which many small cracks appear in the surface of the paint. (2)

A form of cracking characterized by fine cracks distributed over the surface of the dry film in a more or less regular pattern. (9)

Tiny breaks in the surface of the paint film. Usually "V" shaped and underlying surface is not visible. (12)

Checking (19)

That phenomenon manifested in paint films by slight breaks in the film that do not penetrate through the last applied coating. Where precision is necessary in evaluating paint film, checking may be described as visible (as seen with the naked eye) or as microscopic (as observed under a magnification up to ten diameters). Many types of checking are recognized, of which some are:

IRREGULAR PATTERN TYPE – Checking in which the breaks develop in the surface of the film in no definite pattern.

LINE and SHORT PARALLEL TYPE – Checking in which the breaks in the surface of the film are generally arranged in parallel lines.

SWITCH TYPE – Checking in which the breaks in the surface of the film form short and long irregular lines crossing each other in a wire brushed pattern.

CROW FOOT TYPE – Checking in which the breaks in the surface of the film form in a definite three-pronged pattern with the breaks running from a center and forming an angle of about 120° between the prongs.

MOSAIC TYPE – Checking in which the breaks in the surface of the film straight sided, geometric patterns which join on all sides.

SHRINKAGE TYPE – Checking in which the breaks in the surface of the film usually form individual short breaks with shorter irregular breaks progressing at right angles.

SHORT, RANDOM TYPE – Checking in which the breaks in the surface of the film form short, irregular patterns. These breaks are usually individual and do not join.

SIGMOID TYPE – Checking in which the breaks in the surface of the film form oval patterns. These oval shapes rarely complete their circle.

Chemical pre-treatment

A general term for any chemical process applied to a surface prior to the application of a coating material (e.g. chromating, phosphating ...) (10)

Chip board

Board formed from wooden particles, glued and pressed together. (1)

Chipping

Total or partial removal of a dried paint film in flakes by accidental damage or wear during service. (3)

The removal, in flakes, of paint or rust and mill scale, by use of hand or power tools. (10)

Separation of paint from previous coats in chips or flakes. (12)

Chlorinated solvents

Powerful organic solvents that contain chlorine. Examples include 1,1,1-trichloroethane and methylene chloride. These solvents are characterized as volatile organic compounds. Their use is regulated and heavily restricted. (3)

Chroma

A measurement of brilliance or intensity of a color. (4)

Chromating

The chemical pre-treatment of the surface of certain metals using solutions usually consisting essentially of chromic acid and/or chromates. (10)

Cissing

Defect of a coating film which occurs when the substrate is contaminated by incompatible chemicals around which the coating "withdraws" leaving some parts of the underlying substrate uncoated. This defect is generally referred to also as FISH EYE or CRATERING.

	(1)
	The appearance in the film of areas of non-uniform thickness which vary in extent and distribution. (9)
	Areas of a wet film where the coating material recedes or 'pulls away' from the surface. (23)
Clear coating material	A coating material which when applied to a substrate forms a solid transparent film having protective, decorative or specific technical properties. Also see varnish. (7) (8)
Clear coatings	Coatings with no added pigments which leave a completely transparent film after drying. (1)
Clearcoat	A transparent coating sprayed over a base or colour coat to produce high DOI (Distinction of Image) finishes. (12)
Closed pore	Application system by which the pores of the painted items are completely filled. (1)
Cloudy	A hazy appearing film on varnish or enamel. (12)
Coalesce	A carrier solvent (aqueous) that evaporates or absorbs into the substrate from which particles deform and nit together to form a continuous film. (12)
Coalescence	A type of drying and curing process of water-based paints and coatings. (4)
Coalescing	The flowing or melding together of emulsion particles when a latex paint dries. (2)
Coat	A continuous layer of a coating material resulting from a single application. (8)
Coating	A liquid or mastic composition which is converted to a solid protective, decorative, or functional adherent film after application as a thin layer. The South Coast Air Quality Management District defines coatings as materials which are applied to a surface and which form a continuous film in order to beautify and/or protect the surface. (3)
	A general term referring to any type of paint, stain, etc. (2)
	An advanced or specialized paint designed to have a specific function pertaining more to the protection rather than the aesthetics of a substrate. Coatings will maintain a DFT higher than that of paint films. (4)
	Any paint, varnish, or lacquer. Chemical coatings denote industrial finishes. The act of applying. (12)
Coating defects (11)	<p>ADHESION-POOR</p> <p>Appearance (Figure 1):</p> <ul style="list-style-type: none"> • Coating is easily removed from substrate or from primer coat, but hardness and mar resistance are maintained. <p>Cause:</p> <ul style="list-style-type: none"> • Improper surface preparation. • Painting over oil, grease or other contaminants. • Improper curing schedule. • Poor substrate integrity. • Incompatibility of one coat to another or to substrate. <p>Troubleshooting:</p> <ul style="list-style-type: none"> • Ensure proper pre-treatment. • Surface to be painted must be thoroughly clean and dry. • Use recommended curing schedule • Ensure that substrate has good integrity. • Follow acceptable practices using compatible materials. • Possibly sand or scotchbrite surface to be painted. <p>Remedy:</p> <ul style="list-style-type: none"> • Remove coating, pre-treat properly and refinish. • If poor substrate integrity, problem may not be solved. <p>AIR ENTRAPMENT</p> <p>Appearance (Figure 2):</p> <ul style="list-style-type: none"> • Wet coating has very "fine" air bubbles in the film. <p>Cause:</p> <ul style="list-style-type: none"> • Improper atomization.

- Too much atomization air.
- Imbalance of solvent blend.

Troubleshooting:

- Use different application method i.e., air spray vs. airless spray.
- Use different air cap/ fluid nozzle combination.
- Use slower evaporating solvent blend.
- Adjust atomization air vs. fluid pressure ratio.
- Increase electrostatic high voltage.

Remedy:

- Allow coating to ambient "flash" longer.
- Sand and refinish.

BLISTERING

Appearance (Figure 3):

- Small swelled areas like a water blister on human skin.
- Pinpoint holes in finish.
- Lack of gloss if blisters are minute.
- Broken edge craters if the blisters have burst.

Cause:

- Improper thinning solvent – too fast evaporating.
- Excessive film build trapped solvents.
- Excessive temperature in first oven zone.
- Insufficient flash off time before baking.
- Gasses entrapped in the substrate during the manufacturing process are forced out through the coating when baked at high temperatures.

Troubleshooting:

- Reduce with slower evaporating solvents.
- Reduce film build.
- Reduce temperature in first oven zone.
- Increase flash off time prior to baking.
- Reduce overall oven temperature.

Remedy:

- Sand and refinish.

CRATERING

Appearance (Pitting – Figure 4, Fisheyes – Figure 5):

- Small crater-like depressions in the film.

Cause:

- Improper cleaning of substrate.
- Oil, water or other contaminant in spray lines.
- Silicone or other contaminant in working area atmosphere.
- Low film build.
- Overly wet application.

Troubleshooting:

- Surface to be painted must be thoroughly clean and dry.
- Increase film build.
- Use proper maintenance to prevent contaminants from entering spray lines.
- Eliminate contaminants from entering application areas.
- Spray the coating "drier" using multiple passes.
- Increase viscosity of paint.

Remedy:

- Sand and refinish.

DIRT

Appearance (Figure 6):

- Foreign particles dried in paint film.

Cause:

- Improper cleaning of the substrate.
- Defective air regulator cleaning filter.
- Dirty working area.
- Defective or dirty air inlet filters in spray booth and/or ovens.

- Dirty spray equipment.
- Dirt in oven or paint.
- Insufficient agitation or paint–settling.

Troubleshooting:

- Clean surface thoroughly.
- Be sure all equipment is clean.
- Replace air inlet filters if dirty or defective.
- Maintain a clean spray area.
- Clean or replace filters in solvent lines, air regulator, compressor, and paint lines.
- Keep all paint containers closed to prevent contamination.
- Periodically clean ovens.
- Flush paint lines thoroughly with clean solvent when not in use and prior to changing paints.
- Agitate paint thoroughly before using.

Remedy:

- Sand and refinish.

FLOATING

Appearance (Flooding – Figure 7):

- Streaking of the colour.

Cause:

- Heavier film thickness in some areas.
- Insufficient agitation of paint–separation.

Troubleshooting:

- Avoid heavy film build-up.
- Do not over-reduce paint.
- Agitate paint thoroughly before using.

Remedy:

- Refinish.

ORANGE PEEL

Appearance (Dry Spray – Figure 8 and 9):

- Resembles the skin of an orange.

Cause:

- Under reduced paint.
- Improper thinning solvent – too fast evaporating.
- Low film build.
- Improper air pressure.
- Lack of proper flow.
- Paint temperature too low.
- Substrate temperature too high.

Troubleshooting:

- Lower viscosity of paint.
- Reduce with slower evaporating solvents.
- Proper air and application equipment adjustments.
- Maintain constant paint and substrate temperature.

Remedy:

- Sand and refinish.

PRETREATMENT STAINING

Appearance (Water Spots) (Figure 10):

- Streaks or blotchiness visible through cured paint finish.

Cause:

- Excessive pre-treatment chemicals remain on substrate surface.

Troubleshooting:

- Ensure sufficient rinsing during pre-treatment to remove any excess chemicals.
- Improve part hanging.
- Design drain holes to ensure complete drainage of pre-treatment chemicals.

Remedy:

- Apply primer and refinish.

RUNS**Appearance (Sags – Figure11):**

- Running of the paint film in rivulets; mass slippage of the total film.

Cause:

- Over reduced paint.
- Improper thinners – too slow evaporating.
- Excessive film build.
- Paint temperature too high.
- Substrate temperature too low.
- Insufficient agitation of paint – separation.

Troubleshooting:

- Use recommended thinner at specified reduction and air pressure.
- Decrease film build.
- Maintain constant paint and substrate temperature.
- Agitate paint thoroughly before using.

Remedy:

- Sand and refinish.

WRINKLING**Appearance (Figure – 12):**

- Puckering of enamel.
- Prune skin effect.
- Loss of gloss as film dries (minute wrinkling not visible to the naked eye).

Cause:

- Excessive film build.
- Surface drying trapping solvents.
- Fresh film subjected to heat too soon.
- Contamination in oven or paint.

Troubleshooting:

- Decrease film build.
- Clean all agitation equipment and paint lines thoroughly before changing colours or products.
- Periodically clean oven. NOTE: Do not use chlorinated solvents or acid for cleaning ovens or areas around ovens.

Remedy:

- Remove wrinkled coating and refinish.

SOLVENT POPPING**Appearance (Figure 13):**

- Small swelled areas like a water blister on human skin.
- Pinpoint holes in finish.
- Lack of gloss if blisters are minute.
- Broken edge craters if the blisters have burst.

Cause:

- Improper thinning solvent – too fast evaporating.
- Excessive film build trapped solvents.
- Excessive temperature in first oven zone.
- Insufficient flash off time before baking.
- Gasses entrapped in the substrate during the manufacturing process are forced out through the coating when baked at high temperatures.

Troubleshooting:

- Reduce with slower evaporating solvents.
- Reduce film build.
- Reduce temperature in first oven zone.
- Increase flash off time prior to baking.
- Reduce overall oven temperature.

Remedy:

- Sand and refinish.

PINHOLES**Appearance (Figure 14):**

- Small swelled areas like a water blister on human skin.

- Pinpoint holes in finish.
- Lack of gloss if blisters are minute.
- Broken edge craters if the blisters have burst.

Cause:

- Improper thinning solvent – too fast evaporating.
- Excessive film build trapped solvents.
- Excessive temperature in first oven zone.
- Insufficient flash off time before baking.
- Gasses entrapped in the substrate during the manufacturing process are forced out through the coating when baked at high temperatures.

Troubleshooting:

- Reduce with slower evaporating solvents.
- Reduce film build.
- Reduce temperature in first oven zone.
- Increase flash off time prior to baking.
- Reduce overall oven temperature.

Remedy:

- Sand and refinish.

BRITTLENESS

Appearance:

- Coating displays excessive rigidity and flakes off when scraped.

Cause:

- Overbaking. Excessive temperature and/or excessive time in oven.
- Excessive film build.
- Incompatibility of one coat to another or to substrate.
- Improper surface preparation.
- Improper coalescence in waterborne paints.

Troubleshooting:

- Avoid overbaking.
- Reduce film build.
- Follow recommended practices using compatible materials.
- Ensure proper pre-treatment.

Remedy:

- Remove coating and refinish.

EXCESSIVE EDGE BUILD (EXCESSIVE EDGING)

Appearance (Electrostatic Wrap):

- Heavy build-up of paint on edges and protruding surfaces.

Cause:

- Electrostatic equipment not properly positioned.
- Voltage too high.
- Some part configurations or rack designs make painting with electrostatic equipment difficult.

Troubleshooting:

- Position equipment correctly.
- Decrease voltage.
- If rack design or part shape cause heavy edge build up, increased air atomization of paint may be necessary.

Remedy:

- Sand and refinish.

LIFTING

Appearance:

- Raising and sealing of the wet film.
- Peeling when surface is dry.

Cause:

- Improper curing of previous coating.
- Solvents in topcoat too strong.
- Spraying over unclean surfaces.

Troubleshooting:

- Be sure surface to be coated is properly cured.

- Use only recommended thinners.
- Clean surfaces to be painted thoroughly.

Remedy:

- Remove lifted surfaces and refinish.

POOR COVERAGE**Appearance (Electrostatic Wrap)**

- Insufficient paint film.
- Poor coverage on reverse side of parts and/or into recessed areas.

Cause:

- Electrostatic equipment not properly positioned.
- Voltage too low.
- Poor grounding or parts due to excessive paint build up on hooks, racks, and/or conveyor.
- Electrical resistance of paint too high.
- Poor conductivity of parts.

Troubleshooting:

- Position equipment correctly.
- Increase voltage.
- Remove excess paint from hooks, racks, and conveyor.
- Lower electrical resistance of paint.
- Check conductivity of parts.

Remedy:

- Sand and refinish.

GLOSS TOO HIGH**Appearance:**

- Gloss is higher than acceptable standard.

Cause:

- Paint film is under-cured.
- Excessive film thickness.
- Insufficient agitation of paint–settling.

Troubleshooting:

- Use recommended curing schedule.
- Reduce film build.
- Agitate paint thoroughly before using.

Remedy:

- Refinish.

GLOSS TOO LOW**Appearance:**

- Gloss is lower than acceptable standard.

Cause:

- Paint film is over-cured.
- Insufficient film build.
- Insufficient agitation of paint–settling.
- Poorly cleaned surface.
- Using poorly balanced thinner or reducer.
- Topcoats applied onto wet subcoats.
- High humidity

Troubleshooting:

- Use recommended curing schedule.
- Increase film build.
- Agitate paint thoroughly before using.
- Clean surface to be painted thoroughly.
- Use recommended thinners.
- Allow all coatings sufficient drying time.

Remedy:

- Refinish.

POOR COLOR MATCH

Appearance:

- Colour does not match approved standard.

Cause:

- Difference in gloss due to overcuring or undercuring.
- Paint contaminated with other colours.
- Poor application technique (metallics).
- Excessive or insufficient film build.
- Insufficient agitation of paint – settling or separation.

Troubleshooting:

- Use recommended curing schedule.
- Clean all paint lines and agitation equipment thoroughly before thoroughly before switching colours.
- Employ proper application techniques when spraying metallics.
- Ensure proper film thicknesses.
- Agitate paint thoroughly before using.

Remedy:

- Refinish.

SOFT FILM

Appearance:

- Soft cheesy film; easily removed with fingernail after curing schedule.

Cause:

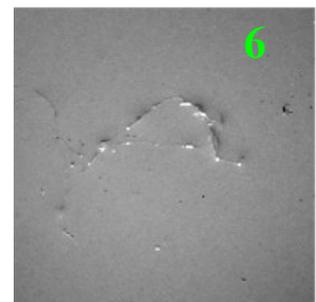
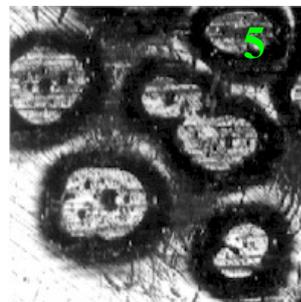
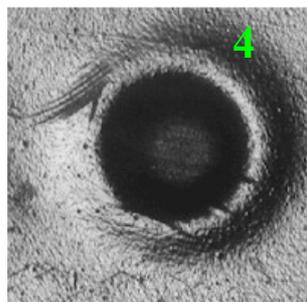
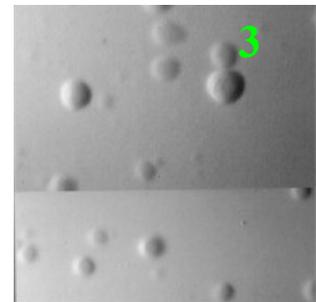
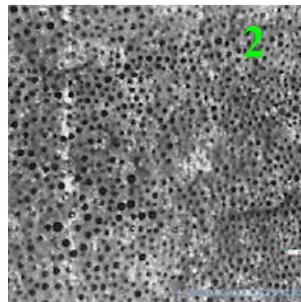
- Film is under cured.
- Excessive film build.

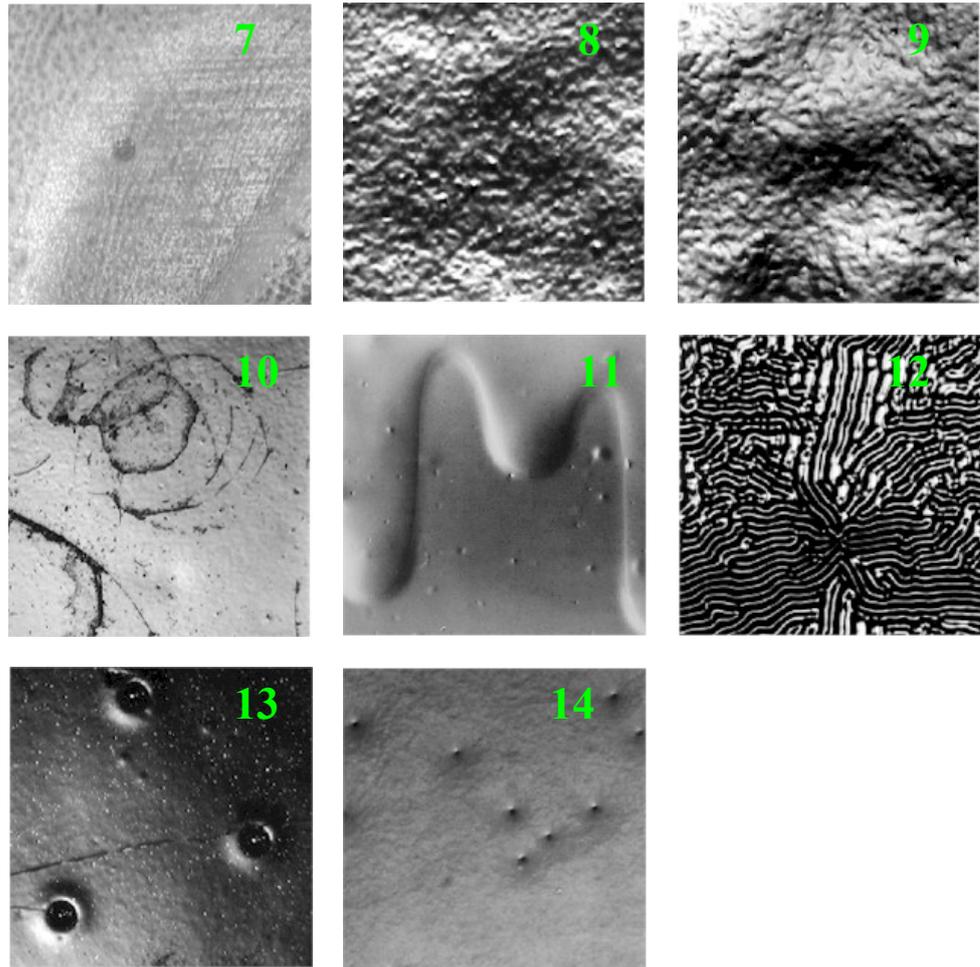
Troubleshooting:

- Use recommended curing schedule.
- Decrease film build.

Remedy:

- Cure at recommended schedule.



**Coating line**

Coating lines are all operations involved in the application drying and/or coating of surface coatings. However, this definition may not have enough specific guidance to delineate between what constituents separate coating lines in a source, especially when a single oven may cure parts from multiple spray booths. This definition may not be necessary for most rules when the exemption level of the rule is not related to the volume of coating applied per coating line. (3)

Coating material

A product, in liquid or in paste or powder form, that, when applied to a substrate, forms a film possessing protective, decorative and/or other specific properties. (7) (8)

Coating powder

See POWDER COATING MATERIAL. (8)

Coating process

The general term to describe the process of application of a coating material to a substrate, such as dipping, spraying, roller coating, brushing. (8)

Coating system

Paint products used together to cover the same surface. The film may be the result of primer, undercoat and topcoat (also called finish coat). (2)

includes all the operations required for the painting of timber and could be exemplified as follows (1):

1st stage: staining of timber

2nd stage: application of the base coat

3rd stage: sanding

4th stage: application of the top coat

Further stage(s) may be included according to specific requirements.

The sum total of the coats of coating materials which are to be applied or which have been applied to a substrate. (7) (8)

Coatings (1)

Wide range of liquid products, which, when applied on a surface, form a continuous film with protective, decorative or particular technical properties. They are roughly a blend of polymers (the film-forming binder), solvents, additives, pigments, extenders and flattening agents.

Coatings can be divided into well defined families according to the modality of drying and film forming, to the chemical nature of the polymers and the coatings stage at which they are used (barrier, basecoat, topcoat).

Coatings can dry in two different ways:

1. simply by evaporation of solvents (physical drying)
2. by chemical reaction between two or more components (often together with physical drying)

The first drying mode is typical of the following families of coatings:

NITROCELLULOSE – based on a mixture of nitrocellulose with alkyds. Main characteristics are:

- physical drying (only by solvent evaporation)
- low solids content (low build)
- fast drying
- poor chemical and mechanical resistance
- suitable for open-pore coatings systems (low build)

WATERBORNE – based on acrylic, polyurethane or alkyd polymers emulsions. The film is formed when water evaporates from the applied coatings and the dispersed polymer particles join together. Relevant characteristics are:

- medium to low solids content
- medium to low mechanical properties and chemical resistance (may be improved by addition of a crosslinker)
- environmentally safer than solvent-based coatings
- possibility of blocking problems on exposure to heat due to the thermoplasticity of resins

The second drying mode is associated with the following families:

POLYURETHANE (PU) – 2-pack products which react after blending of the two components (part A and part B). Part A is a blend of alkyds, additives and solvents. Part B is a blend of polyfunctional isocyanate resins, containing less than 0.5 % of free monomer. They probably represent the best compromise between versatility of application, chemical and mechanical properties of dried film, and aesthetics of top coats. Pot-life is usually in the range of 2-6 hours. Ideally Pus and particularly wet look top coats should be applied under controlled conditions (15-25 °C / 40-75 RH) in dust-free areas. However, higher temperature and humidity can be compensated for by choosing suitable thinners and hardeners.

A particular case of PU coatings is represented by acrylic-urethane coatings, where the polymer contained in part A is an hydroxylated acrylic resin, ensuring a remarkably high light fastness.

POLYESTER – 3-pack products which react after blending of the three components (part A, part B, part C). Part A is based on polyfunctional unsaturated polyesters. Part B is a solution of an organic cobalt compound which accelerates the reaction. Part C is a solution of organic peroxide, which initiates the chemical reaction. PE coatings are remarkable for:

- high solids content (high build)
- excellent surface hardness
- excellent abrasion resistance
- possibility of applying thick coats without surface defects
- elasticity is worse than PU
- short pot-life

Certain kinds of polyesters can also be cured by means of UV light. PE coatings are quite sensitive to substances contained in exotic timbers or stains, and therefore often require a barrier coat.

ACID CURING – 2-pack products based on urea or melamine / formaldehyde resins which can crosslink when blended with a proper acid. Main characteristics are:

- good surface hardness
- poor elasticity
- long pot-life
- development of formaldehyde on drying (possible health hazards)

UV CURED – based on a blend of polyfunctional unsaturated polyesters or acrylates, reactive thinners and photoinitiators. These coatings are 100% solids, and undergo instant curing when irradiated by UV light allowing immediate stacking. Films obtained are very hard and show good abrasion and chemical resistance. UV coatings are usually applied by roller coater but formulations for spray or curtain coater are also available.

LONG OIL ALKYD BASED – cure through an oxidative reaction initiated by oxygen and accelerated by means of specific additives called driers. They are commonly used as exterior grade coatings as they have good properties on aging (reduced cracking or peeling even after a few years of exposure) and because of the easy maintenance.

Cobwebbing	<p>The tendency of spray paint to form strands rather than droplets as it leaves the spray gun. Cobwebbing may be caused by too volatile a solvent or too little air pressure. (3)</p> <p>A spider web effect caused by the premature drying of a sprayed paint or coating. (4)</p>
Cohesion	<p>The ability of a coating to hold together (the attraction of molecules within the coating). (2)</p> <p>The bonding of paint particles to one another, across the film of paint. (4)</p> <p>The state or process by which the particles of a body or substance are bound together. (12)</p>
Coil coating	<p>A coating process whereby the coating material is applied continuously to a coil of metal which can be rewound after the film has been dried. (10)</p>
Cold check cycles	<p>Laboratory test to evaluate the behaviour of dried films under severe stressing conditions. It usually consist of 10 cycles, each one arranged as follows:</p> <ul style="list-style-type: none"> - 1 hour at 60 °C - 1 hour at -20 °C - 10 minutes reconditioning at room temperature (1)
Cold cracking	<p>The formation of cracks in the film resulting from exposure to low temperatures. (9)</p>
Cold-checks (20)	<p>True cold-checks on solid wood show as one ore more straight cracks on the applied film. Cold-checks manifest themselves in either of two ways:</p> <ol style="list-style-type: none"> 1) Long continuous wavy lines with the grain or at various directions at angles that can be perpendicular to the direction of the grain. 2) Innumerable fine lines erratic in direction and length forming a network over a portion or all of the panel. This effect may be linked to crazing of the lacquer film. 3) On plywood the direction of the cracks will often vary because of the stresses set up by other than the top stratum. Therefore, all checks may be considered as failures, and appropriate notations on the character of the cracks must be made to assist in the interpretation. While it is recognized that cracks in the substrate may occur (veneer cracking), failures observed in the lacquer coating may be due to action of moisture (humidity) or of cold, or both. Checking caused by moisture appears along the grain and is characterised by short cracks (usually not more than ½ in. (13 mm) in length) occurring either singly or in clusters. These lines or clusters may progress along the grain in a discontinuous fashion. Should either veneer checking or moisture checking be observed, the test should be discontinued, and rerun. <p>The checks may be perceptible only by visual observation of the panels at an angle, under a strong light, or the cracks may be wide enough to be readily discernible in direct daylight.</p>
Colloidal dispersion	<p>Particles dispersed in a water solubilized phase (single) that generally has a hazy</p>

	appearance. (12)
Color chip	A color sample usually consisting of a paint applied to a small piece of card (a chip). (2)
Color difference (computed)	The magnitude and direction of the difference between two psychophysical color stimuli defined by tristimulus values, or by chromaticity coordinates and luminance factor, as computed by means of a specified set of color-difference equations. (22)
Color difference (perceived)	The magnitude and character of the difference between two colors described by such terms as redder, bluer, lighter, darker, grayer or cleaner. (22)
Color retention	The ability to retain and preserve the original color for an extended period of time. (4) This refers to the ability of a paint to retain its original colour for a long period of time. (12)
Colorant	Colored pigment added in small proportions to prepared paints to tint them. (2)
Colour	The sensation resulting from the visual perception of radiation of a given spectral composition. (8)
Colour retention	Capacity of the coating film or of the stain to maintain its original colour shade when exposed to light. See also LIGHT FASTNESS. (1)
Combustible	Able to burn. (2)
Combustible liquid	A liquid having a flash point at or above 100 °F. (4)
Compatibility	The capacity of coating powders from either different sources or of different compositions when combined and applied which yield no visible or mechanically measurable differences in the cured film or application properties. (5) Ability of two or more materials to mix with each other without separation. (1) 1) of materials: The ability of two or more materials to be mixed together without causing undesirable effects. (8) 2) of a coating material with the substrate: The ability of a coating material to be applied to a substrate without causing undesirable effects. (8) The ability of materials to get along together without separation or reaction. (12)
Conditioning atmosphere	Atmosphere where the test unit is placed just for one week before testing. (6)
Conditions for good painting	Conditions for good painting (1): - Environment must be free from dust and contaminants with the temperature ideally between 18 and 24° C and relative humidity (RH) from 40 to 75% - Timber or wooden items should have a relative humidity from 8 to 14% - Coating system must be chosen in accordance with the required final properties and the application system available - Viscosity must be suitable for the application system - Mixing of different components has to be done according to the proportions advised by manufacturers - Timber or wooden items have to be well prepared (sanded, cleaned and reduced to the desired thickness in case they have to be worked on line) - Drying tunnel, when available, has to be at the required temperature. - Application equipment (guns, pumps, pipes, curtain coaters, etc.) must be perfectly clean, in particular the air of the compressor must be dehydrated and oil-free. - Coating must always be well stirred before application.
Conductive primer	A primer which when electro-deposited or spray applied and cured will not act as an insulator of the coated metallic object, but will conduct current for the electro-deposition or spray application of a second coating or topcoat film. (12)
Conductivity	Ability of a coating to conduct electrical charges (inversely proportional to resistivity). This characteristic is exploited in electrostatic application of coatings (see SPRAY GUNS).

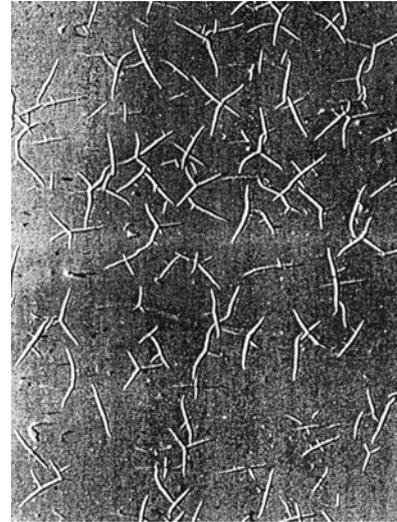
	(1)
Consistency	Viscosity. (2)
Continuous coater	An enclosed automatic spray booth that recovers and reuses oversprayed paint. A continuous coater is suitable for coating large volumes of similarly-sized parts. (3)
Contrast ratio	<p>A value related to the hiding power of a coating which must be reported at a specific film thickness; the ratio of the reflectance of a coating is measured over black and white backgrounds at the same film thickness; the results are measured as a numerical value – in general, a 0.98 contrast ratio is visually opaque; directly related to product pigmentation; minimum film thickness with full coverage of the substrate is critical (see also Hiding Power or Opacity). (5)</p> <p>The hiding power of paint is usually determined by coating both white and black areas of a draw-down sheet. The brightness of the film over the black area is divided by the brightness over the white area to determine the ratio. Normally expressed as a percentage. The higher the number, the better the hiding. (12)</p>
Control chart	A graphic representation of what a process is producing. (3)
Control limit	A line on a control chart that describes whether process control is problematic or in control. (3)
Conventional spraying	The process of atomizing paints and coatings by use of air under moderate pressure. (4)
Conversion coating	A chemical or electrochemical treatment of the metal surface to convert it to another chemical form that provides an insulating barrier of exceedingly low solubility between the metal and its environment, but which is an integral part of the metallic substrate. Examples are phosphate coatings on steel and zinc and chromate coatings on aluminum. (3)
Corona charging	Same as Electrostatic Spray Method. (5)
Corrosion	<p>A new, accelerated coating test by ASTM, called “Standard Practice for Cyclic Salt Fog/UV Exposure of Painted Metal,” evaluates the interactive effects of weathering and corrosion. The test combines alternating exposures in a fog/dry cabinet and a UV/condensation cabinet. (3)</p> <p>Decomposition or reaction with oxygen, water, or other chemicals, when exposed to a particular environment. (5)</p> <p>To eat away by chemical action. An oxidation process such as rust on steel. (12)</p>
Cosolvents	Water-miscible organic solvents. Waterborne paints frequently require cosolvents in addition to water for easier manufacture and improved application properties. (3)
Coverage	The area over which a given amount of paint will spread and completely hide the surface. Coverage, also known as spreading rate, is normally expressed in square feet per gallon or in square metres per litre. (2)
Coverage (calculated)	Determines the sq.ft./pound @ 1.0 mil; adjust accordingly for other film thicknesses. (5)
Covering power	The ability of a coating to completely cover a surface. It is usually expressed in square feet per gallon. (12)
Cracking	<p>The splitting of a dry paint film, usually the result of aging. This includes hair cracking, checking, crazing, and alligatoring (crocodiling). (3)</p> <p>Breaks in the paint film wide enough to expose the underlying surface. (2)</p> <p>Defect of a coating film resulting in breaks in its surface and/or in its depth. It can be caused by (1):</p> <ul style="list-style-type: none"> - application of coats thicker than specified, - movements of the substrate which the coating film is not able to compensate for, - excess of curing agent resulting in too fast drying and/or too brittle dry film, - some solvent still being present in UV coatings when they are passed under the UV lamps for immediate curing. <p>Larger than hairline breaks in the surface of the film. Usually curled edges and underlying</p>

surface is exposed. (12)

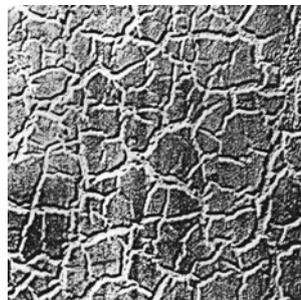
The rupturing of the dry film. The term is used also for a specific form as illustrated bellow. Hair cracking, crocodiling and crow's foot cracking are examples of forms of cracking. (9)



CRACKING



CROW'S FOOT CRACKING



CROCODILING

Cratering

Small round depressions in a paint film which may or may not expose the underlying surface. (3)

See CISSING. (1)

The formation in the film of small circular depressions that persist after drying. (9)

Areas of a wet film where the coating material recedes or 'pulls away' from the surface leaving circular gaps in the film. (23)

Crawling

A defect in wet paint or varnish film where it recedes from small areas of the surface, leaving them apparently uncoated. Crawling is caused by an incompatible film on the surface. (3)

A condition where a paint or coating will slide or draw away from areas during application, leaving bare or unpainted areas. Common causes are surface contamination (wax, oil, grease, etc.) and painting over an extremely hard or non-porous surface. (4)

An extreme form of cissing. (9)

The tendency of some liquids to draw themselves into beads or drops caused by high surface tension of applying paint on a high gloss surface can also be caused by substrate contamination. (12)

Areas of a wet film where the coating material recedes or 'pulls away' from the surface. (23)

Crazing

The formation of fine surface cracks, often as a network, that do not penetrate to the underlying surface. (3)

Small interlacing cracks in the paint film. (2)

Similar to checking but the cracks are deeper and wider. (9)

Critical pigment volume concentration (C.P.V.C.)

The particular value of the pigment volume concentration for which the voids between the solid particles which are nominally touching are just filled with binder and beyond which certain properties of the film are markedly changed. (8)

Crocodiling	See CRACKING. (9)
Crosshatch adhesion	Determines the relative adhesion of a coating to the substrate (ASTM D 3359, Method B). (5)
Crosslinking	The setting up of chemical links between the molecular chains of a resin to form a three-dimensional network polymer system. Crosslinking generally toughens and stiffens coatings. (3) A type of drying or curing process for paints and coatings. (4)
Crow's foot cracking	See CRACKING. (9)
Cup gun	A spray gun used with a siphon cup. (3)
Curdling	To coagulate. Lumpy solids in paints or varnishes. (12)
Cure	Using heat, radiation, or reaction with chemical additives to change the properties of a polymeric system into a final, more stable, usable condition. For liquid coatings, it is the process by which the liquid is converted into a solid film. (3) To harden a coating film by applied heat or catalyst. (12)
Cure schedule	The time at temperature necessary for a coating to develop specific properties. (5)
Curing	See DRYING. (1)
Curing agent	Catalyst to produce drying or hardening effect - or both. (12)
Current density	A measure of the total electrical flow across a given area, frequently expressed in units of amps/square foot. (3)
Curtain coater	Coating machine where the coating, contained in a proper tank, is pumped through a narrow opening bounded by two blades which shape it in the form of a curtain, and let it flow continuously onto flat panels passing through by means of a conveyor. (1)
Curtain coating	The application of a coating material by passing the article to be coated horizontally through a descending sheet of a continuously recirculated coating material. (10)
Curtaining	The formation of runs and sags in a dried or cured film of paint which resemble curtains. Common causes are excessive application of paint, excessive thinning or application over a substrate that's temperature is too cold. Also known as sagging and running. (4)
Curtains	Sagging of paint. A curtain effect. Usually caused by applying too heavy a coat of paint. (12)
Cut-back	To add liquid. To thin. (12)
Cut-in trim guide	A tool to protect adjacent surfaces when painting up against them. (3)
Cutting-in	The brushing technique that is used when a clean, sharp edge is needed. Cutting-in is needed, for example, for a window sash (using a sash brush), the top of a wall where it meets the ceiling, and in areas that are hard to reach (especially when using a roller). (2) An operation where the application of paints and coatings are applied to the edges of substrates, usually by a brushing method. (4) The application of a coating material by brush up to a predetermined line. An example is applying the coating material to the frames of windows without applying it to the glazing. (10)
Cyclone separator	A funnel-bottomed enclosure that rapidly moves particulate-laden streams of air in a circular path. As the relatively high mass of particles is thrown to the sides of the enclosure, the particles slide down through the funnel into a container for reuse. Cyclone separators are commonly used for powder coating applications. (3)
D egreaser	Combination of solvents for the purpose of removing grease and oil from the surface in preparation for painting. (12)
Degreasing	The removal from a surface, prior to painting, of oil, greases and similar substances by suitable means either of an organic solvent or a water-based cleaning agent. (10)
Deionized water	Water resulting from the removal of contaminants in the water by a double-bed ion

exchanger. The ion exchanger switches H⁺ (hydrogen) ions for positive impurity ions and OH⁻(hydroxide) ions for negative impurity ions. The hydrogen ions and hydroxide ions then combine to form HOH (H₂O). Deionized water is equivalent in purity to distilled water but is much less costly to produce. (3)

Delamination	<p>The act of separation between layers of paint and coating films. (4)</p> <p>Separation between two layers of coating, or a coating and the substrate. (5)</p> <p>Loss of adhesion between applied layers of coating, or between the coating and the underlying substrate. (23)</p>
Delignification	The breakdown of the timber substrate as a result of prolonged exposure to sunlight and rain, resulting in a loose and fibrous surface. (23)
Denatured	Loss of the natural extractives from the timber surface through exposure to sunlight and rain, resulting in greying and bleaching of timbers. (23)
Denib	To remove, by use of a fine abrasive, small raised areas or particles of foreign matter which stand proud on the surface of a coating film, without breaking through the surface coating. (23)
De-nibbing	The removal by rubbing with fine abrasive paper of small particles which stand proud of the surface of the paint film. (10)
Density	Weight of a unit volume of matter (in g/cm ³ or kg/dm ³). In everyday language the term SPECIFIC GRAVITY is often used as a synonym with density, even though specific gravity is formally defined as the weight of a unit volume compared with that of an equal volume of chemically pure water. (1)
Depletion	Removal of only the solids of the EDP (Electro-deposition process) bath. The solids are continuously deposited out while other ingredients remain and build up. (12)
De-scaling	The removal of mill scale or laminated rust from steel or other ferrous substrates. (10)
Dielectric strength	Property of an insulating material where electrical breakdown occurs under specific conditions of test, expressed in volts per mil. (5)
Diluent	<p>Liquids which increase the capacity of a solvent for the binder. Diluents cannot dissolve the binder themselves, but rather are used to control viscosity, flash time, or cost. While true solvents can be added in unlimited amounts to lower paint viscosity, it may be more economical to lower viscosity with less-costly diluent solvents. When added to a prepared paint, a diluent will lower the viscosity just as effectively as a true solvent. However, if too much diluent is added, the resin will separate out of solution and the paint becomes unusable. (3)</p> <p>A volatile liquid, single or blended, which, while not a solvent, may be used in conjunction with the solvent without causing any deleterious effects. See also SOLVENT and THINNER. (8)</p>
Dip coating	The process in which a substrate is immersed in a solution (or dispersion) containing the coating material and withdrawn. (3)
Dipping	<p>Coating process carried out by immersion of the item into a tank containing a suitable coating. The item is then picked up causing dripping of the excess of coating and an even coating is achieved. (1)</p> <p>The application of a coating material by immersing the object to be coated in a bath containing a coating material and then, after the withdrawal, allowing it to drain. (10)</p>
Dip-spin coater	Bulk painting of small and unchangeable parts accomplished by dipping a mesh basket of parts, followed by rapid rotation of the basket to remove excess paint. Parts from the dip-spin coater are dumped onto a belt for curing. (3)
Direct gloss	Property of a top coat producing a glossy surface without polishing. This implies a reduction in processing times but it may require expensive equipment (pressurized booths, upgraded filtration devices, etc.) and very accurate control of temperature, air humidity, etc. (1)
Dirt	An embedded, anomalous material that mars a dried coating. (3)
Dirt pick-up	The tendency of a dry film to attract to the surface appreciable amounts of soiling material.

	(9)
Dirt retention	The tendency of a dry film to retain on the surface soiling material which cannot be removed by simple cleaning. (9)
Disbondment or Blistering	The effect, usually at the scribe, of blisters formed under a cured powder film (ASTM C 550). (5)
Disks (discs)	Rotating heads that deliver paint horizontally 360° around the head and use an omega loop conveyer line. A disk is usually mounted horizontally on a vertical reciprocator. (3)
Dispersed	Scattered or completely integrated as pigment separated in a binder. (12)
Dispersion	Suspension of minute particles in a suitable medium. (2)
Dispersion agent	A substance which aids holding pigments in dispersion. (12)
Dispersion coating	A type of coating in which the binder molecules are present as colloidal particles and spread uniformly throughout the formulation as a stable mixture. (3)
Distinctness of Image (DOI)	The sharpness of an image reflected by a coating's surface. (5)
Doctor blade	A device used to prepare paint and varnish films of even and predetermined thickness. (3)
DOI	Distinction of image, depth and clarity. (12)
Drag	The resistance that a paint or coating has when applied by brush. (4)
Drier	An additive which accelerates the drying of coatings. (3) A paint ingredient that aids the drying or hardening of the film. (2) A compound, usually a metallic soap, that is added to products drying by oxidation in order to accelerate this process. (8) Substances added to paint to make it dry quickly. (12)
Drippings	See RUNNINGS. (1)
Drop-sheet	A sheet of cloth or plastic used to protect surfaces during painting of nearby areas. (2)
Dry	Film formation by evaporation of solvent or oxidation of unsaturated compound or catalytic action. (12)
Dry dust free	The stage of drying when particles of dust that settles on the surface do not stick to the paint film. (2)
Dry film thickness (DFT)	The measurement of dry films of paints and coatings, usually expressed in millimetres or microns. Measuring wet films is usually performed with a tool called a wet mil gauge. Dry films are commonly measured using micrometers. (4) A measurement usually in mils of the paint film after drying. (12)
Dry fog	A fast-drying paint that is usually spray applied to metal ceilings. As the paint overspray falls during the application, the overspray dries as fine dust that can be swept up with ease. Also known as dry fall, drop dry, dry drop, Millwhite, Millite. (4)
Dry hard	The final stage of drying and curing. The film is hard when pierced with a fingernail. (4)
Dry tack free	The stage of drying when the paint no longer feels sticky or tacky when touched. (2)
Dry to handle	The stage of drying when a paint film has hardened enough that the painted surface may be used without becoming marred. (2) The stage of drying or curing when the paint or coating has hardened sufficiently so that the object may be touched without fear of marring or damaging the film. (4)
Dry to recoat	The stage of drying when the next coat can be applied. (2) The stage of drying or curing when the next coat may be applied. Select paints and coatings have a "window of opportunity" in which a successive coat must be applied for proper performance. (4)
Dry to touch	The first stage of drying or curing when the paint or coating can be lightly touched without removing any paint. (4)

Drying	Phase during which volatile components such as solvents evaporate from the coating film and polymers start to react, forming a hard solid crosslinked film. It can take place at room temperature, with hot air (30 to 60 °C), with UV lamps or with IR rays (see also DRYING TIME). (1) The sum total of the processes by which a film passes from the liquid to the solid state. (8)										
Drying carousel	Driven course of coated panel bearing trucks in a hot air tunnel, in order to speed up drying. (1)										
Drying time	The period from the time a coating is applied until the time when it attains a specified state of tackiness or hardness. (2) Time necessary for hardening of the coating film. It can be divided into various stages (1): - DUST FREE - TOUCH DRY - SANDABILITY (see SANDING TIME) - STACKABILITY										
Drywall	Any substitute for plaster such as wallboard, plasterboard, gyproc or sheetrock. Drywall typically consists of several thicknesses of fibre board or paper that have been bonded to a hardened core of gypsum. (2)										
Durability	The lasting qualities of a paint film. The wearability of paint under conditions for which it was designed. (12)										
Durability (natural)	The inherent resistance of wood to attack by wood destroying organisms. The term 'durability' used with reference to the classification for heartwood, according to BS EN 350-2 : 1994. The majority of sapwood in commercial use is deemed to be Class 5 (Not Durable). (23) <table border="0" style="margin-left: 40px;"> <tr> <td>Durability class 1:</td> <td>Very Durable</td> </tr> <tr> <td>Durability class 2:</td> <td>Durable</td> </tr> <tr> <td>Durability class 3:</td> <td>Moderately Durable</td> </tr> <tr> <td>Durability class 4:</td> <td>Slightly Durable</td> </tr> <tr> <td>Durability class 5:</td> <td>Not Durable</td> </tr> </table>	Durability class 1:	Very Durable	Durability class 2:	Durable	Durability class 3:	Moderately Durable	Durability class 4:	Slightly Durable	Durability class 5:	Not Durable
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Dust free	First stage of the drying process from the moment of application to the moment when dust that settles on the film does not stick to it. (1)										
Dwell time	The length of time a part is in an oven. (5)										
Dyestuff	A natural or synthetic substances which imparts the requisite colour to the coating material in which it is dissolved. See also PIGMENT. (8)										
Dynamic viscosity	Ratio of the applied shear stress to the velocity gradient. The SI unit for dynamic viscosity is the pascal second (Pa·s). The traditional unit is centipoise (cP); 1 cP = 1mPa·s. (13)										
E-coating (electrodeposition)	A dip coating application method where the paint solids are given an electrical charge which is then attracted to the part. In a method closely paralleling electroplating, paint is deposited using direct electrical current. The electrochemical reactions that occur cause water-soluble resins to become insolubilized onto parts that are electrodes in the E-coating paint tank. Subsequent resin curing is required. (3)										
Edge coverage	The ability of a coating in its cured state to flow, build, and adhere to sharp corners, angles and edges. (5)										
Eductor	Nozzles located along E-coat return headers and spaced laterally at intervals across the tank that help to agitate the paint and prevent settling of pigments, which results in cleaner deposited films. (3)										
Effervescence	An effect in the film caused by rapid solvent release. Bubbling action causes a pinholed or cratered appearance in the film, reducing gloss or sheen levels and creating a non-uniform appearance. (4)										

Efflorescence	<p>A deposit of salts that remains on the surface of masonry, brick or plaster when water has evaporated. (2)</p> <p>As moisture evaporates from brick, concrete and masonry, water-soluble salts are deposited on the exterior surface. The deposits are usually white in color and must be removed before applying paints & coatings. (3)</p> <p>White powdery substance on the surface which is the result of soluble salts within the substrate migrating to the surface. (23)</p>
Egg shell appearance	Appearance of a film that has little or no gloss. (1)
Eggshell	A gloss range between flat and semi-gloss. The sheen closely resembles the lustre of an eggshell. Note that eggshell is a degree of gloss, not a color. (2)
Elasticity	<p>Ability of a coating to reassume the shape it had before being submitted to deforming stresses, without cracking. (1)</p> <p>The ability to change size and return to normal without breaking. Most thermoplastic finishes are more elastic than oxidized coatings. (12)</p>
Elastomeric	A thick, acrylic-based coating that has the ability to recover to its original size after deformation. The formation of a rubber-like skin provides excellent waterproofing properties. Commonly recommended over exterior masonry substrates. (4)
Electrocoating – anodic	A process in which negatively charged paint film is deposited on to surfaces of substrates. The deposition occurs as a result of an electric current passing between the object coated and an oppositely charged electrode, (usually the electrocoat tank walls), while immersed in a batch of water thinned paint. (12)
Electrocoating – cathodic	An identical process to that of anodic electrocoating except the paint film is positively charged and electrically deposited onto surfaces of negatively charged metallic substrates. (12)
Electrodeposition	The process whereby a film of a water-based coating material is deposited, under the influence of electric current, on an object that forms either the anode or cathode, depending on the nature of the coating material. (10)
Electrodeposition coating	(Also referred to as E-COAT, electrocoating and electropainting.) A process in which a paint film is deposited on all surfaces of a metallic product by the passage of an electric current between the object being coated and another electrode while immersed in a bath of water-thinned paint. (12)
Electrolysis	The passage of current via charged particles (ions) which are discharged on the relevant electrodes. (12)
Electron beam curing	A process for the rapid curing of specially formulated coating materials by means of a concentrated stream of electrons. (10)
Electrophoresis	The movement of charged particles suspended in a liquid under the influence of an applied electric field. (12)
Electrostatic gun	See SPRAY GUNS. (1)
Electrostatic spray	<p>Methods of spray application of coating where an electrostatic potential is created between the part to be coated and the paint particles. (3)</p> <p>Applying paint through electricity. The spray is charged as it leaves the gun. The surface to be coated has the opposite charge. The spray particles are thus attracted to the object with a minimum of overspray and more uniformity. (12)</p>
Electrostatic spray (corona) method	The induction of powder particles exposed to an electrostatic field generated by a high voltage device. (5)
Electrostatic spraying	<p>Technique for providing a smooth, spray-applied coating using electrical resistivity. The coatings are given an electrical charge at the gun while the metal substrate is given an opposite electrical charge. (4)</p> <p>A method of application by which an electrostatic potential difference is applied between the article to be coated and the atomized coating material particles. (10)</p>
Emmaqua	Weathering test performed in Arizona where panels placed in a special apparatus are

	exposed to a brief water spray and magnified sunlight; ambient humidity is fairly low. (5)
Emulsion	<p>A two-phase liquid system in which small droplets of one liquid (the internal phase) are immiscible in, and are dispersed uniformly throughout, a second continuous liquid phase (the external phase). This contrasts with a latex, which consists of solids dispersed in a liquid. (3)</p> <p>A stable suspension or dispersion of fine particles of a liquid or a polymer within another liquid which normally is not miscible with the first one. Typical examples are emulsion paints (acrylic polymers dispersed in water). (1)</p> <p>A mixture of solids and resins suspended in a liquid which will flow together with the aid of an emulsifier. Latex paints are considered emulsions. (4)</p>
Emulsion paint	<p>A coating comprised of an emulsion of a resin binder in water. (3)</p> <p>A coating material in which the medium is a dispersion of organic binder in water. (8)</p>
Enamel	<p>A paint that forms an especially smooth, hard film. Enamels may be obtained in a full range of glosses and can be either latex or alkyd (oil). Consumers, however, often associate the term with alkyd (oil-based) products. (2)</p> <p>A broad classification referring to a paint or coating that dries or cures to a hard finish. (4)</p> <p>Actually "pigmented clear finish". A free-flowing finish that dries hard to the degree of sheen formulated gloss to flat. (12)</p>
Enamel holdout	The ability of a substrate (paint) to prevent the soaking in of the next coat. A paint with proper enamel holdout will provide a surface with even porosity to aid in the uniform appearance of the succeeding coat. (4)
Enamels	Topcoats which are characterized by their ability to form a smooth surface; originally associated with a high gloss, but may also include a lower degree of gloss. Also a class of substances having similar composition to glass with the addition of stannic oxide, or other infusible substances to render the enamel opaque. Can be used to describe a coating which forms a film through chemical union of its component molecules during cure and in shop terminology can be used to describe paint which is no longer a lacquer. All paints, powder or liquid, that form crosslinking chemical bonds during curing, are considered enamels. The majority of industrial finishes fall into this category. (3)
Epoxies	Binders based on epoxy resins. Epoxy crosslinking is based on the reaction of the epoxide groups with other materials such as amines, alcohols, phenols, carboxylic acids, and unsaturated compounds. Also used as a thermoset powder coating. (3)
Epoxy	<p>Products made from synthetic resin derived from petroleum. Epoxies, which are generally cured by catalysts, are perhaps the most durable of all coatings. (2)</p> <p>A type of resin used in paints and coatings. Epoxies are available in many different forms: one- and twocomponent versions, water- and solvent-based versions, polyamide, amine, acrylic, etc. Epoxies offer exceptional adhesion properties and are normally prescribed where chemical and abrasion resistance are required. (4)</p>
Epoxy ester	These epoxies are modified with fatty acids of drying oils and require no catalyst. They require solvents of less strength than catalyzed epoxy and have good adhesion and color retention. They are less resistant to chalking on exteriors than alkyds. Not as chemical resistant as catalyzed epoxy. (12)
Epoxy resins	Condensation of epichlorohydrin and bisphenol. A film made from epoxy resins is extremely durable and solvent resistant. Pure epoxies require strong solvents and a catalyst. (12)
Erosion	The wearing away of a paint film as a result of exposure to the weather. (2)
Etch	Prepare the surface by chemical means to improve the adhesion of coatings. (2)
Etching	<p>A chemical solution used to remove a layer of base metal to prepare a surface for coating or binding. (3)</p> <p>Surface preparation of metal by a chemical process; removal of a layer of the base metal. (5)</p> <p>Cleaning and roughening a surface using a chemical agent prior to painting in order to increase adhesion. (10)</p>

Etching filler	Coatings that contain less than 23 % solids by weight and at least 0.5 % acid by weight, and are used instead of applying a pre-treatment coating followed by a primer. (3)
Evaporation	To convert into a gaseous state or vapour. The action of drying by removing moisture. Lacquers, vinyl and most latex finishes dry by the evaporation of solvents. (12)
Exempt compounds	Hydrocarbon compounds excluded from the definition of volatile organic compound, as defined by the U. S. Environmental Protection Service, on the basis that these compounds have negligible contribution to tropospheric ozone formation. Acetone is an exempt compound. (3)
Explosive limit	The range of vapour concentrations that will burn in air. A flame will not be sustained at a vapour concentration below the lower explosive limit (LEL) or above the upper explosive limit (UEL). (3)
Exposure tests	By exposing applied film to the conditions the film will have to withstand, its weatherability can be determined. These conditions are simulated in the laboratory and the action accelerated in a weatherometer. (12)
Extender	White powders used to give body to the coating. (3) A filler, usually a pigment, used to provide bulk or strength to a paint or coating film. (4) A material in granular or powder form, practically insoluble in the application medium and used as a constituent of paints to modify or influence certain physical properties. (8)
Extensibility	The ability of a coating to stretch with the substrate as it swells or shrinks. (23)
Exterior wood stain (lasure)	A liquid product producing a transparent or semi-transparent film, for the decoration and protection against weathering which enables maintenance to be carried out easily. Such products may contain biocide(s) to protect the film and/or wood interface against blue stain or mould. In some countries the term “opaque wood stain” is also used for a paint applied such that the wood surface structure remains visible. (7)
Extractive	Substance which is not part of the cellular structure of wood and can be dissolved out. (23)
Exudate	Substance which is formed within the cell structure of wood and is mobilised by heat. (23)
Fabric roller	An application tool made from a high nap fabric and designed to apply paint by saturating with paint and rolling across the surface. (2)
Fading	The loss of color in a pigmented coating film over time following exposure to light, heat, etc. (3) The loss of color; lightening or bleaching of color due to exposure to light, heat, chemicals, etc. (4) The loss of colour of the film of a coating material. (9)
False body	Puffing up in container. It is possible to give an abnormal heavy body to paint through formulation that can be lost through thinning to brushing consistency. Present day thixotropic or homogenized paints are false bodied. (12)
Faraday cage	Electrostatic application causes paint particles to be attracted to the nearest grounded object. This attraction force is often strong enough to pull paint particles out of their intended flight direction. Recessed areas on parts often receive insufficient paint coverage since they require a slightly longer path for paint particles. As a result, these Faraday Cage areas may need touch-up painting with non-electrostatic spray. (3)
Faraday cage effect	The phenomenon by which charged particles are prevented from entering recessed areas during the electrostatic application of coatings. (3) The lack of penetration of powder particles into cavities or recessed areas of a substrate due to its configuration. (5)
Fastness	The ability to withstand exposure to heat, light and weather without losing color. (12)
Fatty edge	An excess bead of paint that forms on the bottom edges of parts when they are in the drippage zone following dipping or flow coating. (3)
Feather edging	The tapering, produced by abrading, of the edge of a paint film prior to repainting in order to obscure the laps. (10)

Feather sanding	Sanding to taper the edge of dried paint film. (2)
Feathering	Blending out. The disappearing edge of a paint film. (12)
Ferrule	The metal band that connects the handle and stock of a paint brush. (2)
Filaments	The part of a synthetic paint brush that holds and applies the paint. In a natural bristle brush, the filaments are often referred to as bristles. (2)
Filiform	Corrosion or creep resembling a thread-like formation. (5)
Filler	A composition used for filling fine cracks and pores to make the surface smooth before paint is applied. (2) See BASECOAT. (1) A preparation of pastelike consistency, which is applied to eliminate minor surface defects and/or to produce a smooth, even surface prior to painting. See also STOPPER. The term filler is also used synonymously with EXTENDER. (8)
Filling	The application of a filler to give a level surface. (10)
Film	One or more layers of coating covering an object or surface. (3) A layer or coat of paint or other material applied to the surface. The layer remaining after the paint has dried is often called the dried film. (2) Continuous layer formed on the surface by application of coating. (1) A continuous layer resulting from the application of one or more coats to a substrate. (8)
Film thickness	The thickness of any applied coating measured either as wet or dry, by using film thickness gauges. Often described in units of one thousandth of an inch (0.0254 mm) thickness or one mil. (3) The thickness of a coating measured in mils. (12)
Film thickness (17)	The thickness of a coating applied to a substrate is the distance between the surface of the film and the surface of the substrate. The value of the film thickness depends, to some extent, on the method of measurement used. To give a correct value would only be possible if the coating and substrate had flat and even surfaces. In practice, neither the surface of the coating nor the surface of the substrate is even. In many cases, the surface irregularities exceed 10 % of the film thickness. The results of the measurements by different methods are influenced the irregularities. The influence is different for each method. Therefore, the results of different methods applied to the same specimen may differ markedly. This is the reason why the results of film thickness measurements always have to be reported together with information on the method of measurement and which type of instrument was used, plus the bias of the instrument, if known.
Fine line	See RECONSTITUTED VENEER. (1)
Fineness of grind	Term related to the size of the largest particles in a mill base or in a coating material, and which is usually measured by means of a suitable gauge. (8) How well or how little pigment is dispersed in a coating formula. Measured from (0) very coarse to (8) (perfect dispersion). On a Hegman grind gauge, enamels normally require a 6-8 grind; flat finishes 4-6 grind. (12)
Fines	Small powder particles, usually less than 10 microns. (5)
Fingering	A broken spray pattern delivering heavier paint to one area of the spray pattern than another. (4)
Finish coat	Topcoat. (2) Top coat. (7)
Finishing coat	See TOP COAT. (8)
Fire retardant	Coatings suitable to delay combustion of the substrates on which they are applied, by forming an insulating, protective layer when exposed to high temperatures (such phenomenon is known as intumescence). (1)
Fish eye	A paint defect resulting in a pattern of small surface depressions or craters in the wet film, often caused by surface contamination such as oil or silicone materials. (3)

	See CISSING. (1)
	The presence of craters in a coat each having a small particle of impurity in the centre. (9)
Fisher cup	A viscometer that works like a liquid hourglass. The viscosity of a liquid is determined by the time it takes to flow through the opening in the cup. (12)
Fish-eyeing	Areas of a wet film where the coating material recedes or 'pulls away' from the surface leaving circular gaps in the film. (23)
Flaking	Small pieces of paint surface coming off. Cracking or blistering usually occurs before flaking. (2)
	Detachment of a dried paint film in relatively small pieces. Flaking is usually preceded by cracking and blistering. (4)
	Detachment of small pieces of the coating film from the substrate or the previous coat, usually caused by CRACKING. (1)
	The paint film separates from the substrate and flakes off. A paint failure. (12)
Flame cleaning	The process by which a reducing flame is applied to a surface, followed by manual or mechanical cleaning operations. (10)
Flame treatment	A method of pre-treatment, by a flame, where the surface of a plastic material (e. g. polyethylene) is oxidised to improve the wetting properties of the coating material and the adhesion of the coating, or even to render these possible. (10)
Flammable	Easily set on fire. (2)
	A liquid that can easily be ignited in the presence of a flame; a flash point of less than 100 °F. (4)
Flash point	The lowest temperature of a liquid at which it gives off sufficient vapour to form an ignitable mixture when mixed with air and brought into contact with an open flame or spark. (3)
	The temperature at which a coating or solvent produces vapours that are capable of being ignited when exposed to a spark or flame. (2)
	The lowest temperature at which the solvent vapour and air form an ignitable mixture. (4)
	The temperature at which the vapour of a thinner or solvent will ignite in the presence of sparks or open flame. (12)
Flash rust	The rapid formation of a) a very thin layer of rust on ferrous substrates after blast-cleaning, or of b) rust stains after the application of a water-based coating material on a ferrous substrate. (10)
Flash rusting	Visible rust (blotchy or freckles) appearing on ferrous surfaces when conventional waterborne finishes are applied over exposed ferrous metals. Flash rusting may be avoided, at a nominal cost, with the inclusion of flash rust-inhibitive pigments in the product. (4)
Flashing	Uneven gloss across the dried film of paint. (4)
	Uneven degree of gloss over surface due to poor prime coat, poor application or the early exposure of a film to condensation (moisture). (12)
Flash-off time	The time required between application of successive wet-on-wet coatings or between application and baking to allow the bulk of the solvents in the coating to rise slowly and evaporate. In baked coatings the flash-off time helps to prevent solvent boil off and film blistering. (3)
	The time necessary between the application of successive coats wet-on-wet or the time for the evaporation of most of the volatile matter before stoving or curing by radiation. (8)
Flat	Practically no gloss even when the surface is viewed from an angle. A flat finish has even less gloss than an eggshell finish. Flat paint is less durable than higher gloss paint. (2)
	Without sheen or gloss. (12)
Flat coatings	Coatings which register gloss less than 15 on an 85-degree meter or less than 5 on a 60-degree meter. This definition is usually found in architectural coating rules. (3)
Flat finish	Paint which dries to a coating that scatters the light falling on it so as to be substantially

	free from gloss or shine. (3)
Flattening agent	The ingredient used in coatings to give a flat or hand-rubbed effect. Calcium, aluminum or zinc stearate are used. Silicate flattening pigments give a better product than these metallic soaps. (12)
Flexibility	The ability of a coating to expand and contract during temperature changes. (2) Measures a coating's bend capability over a given shape (ASTM D 522, Method A=mandrel, Method B=rod). (5) The ability of a dried film to follow without damage the deformations of the substrate to which it is applied. The use of the term "elasticity" to describe the flexibility of a film is incorrect. (7) (8) The ability of a film to easily bend without cracking or losing adhesion. (12)
Floating	A concentration of ingredients that appears near the top level of liquid. Usually colorants, binders or solvents. (4) A defect consisting of the preferential raising to the surface of one or more components during drying. In a pigmented coating where the final colour is based on a mixture of several pigments, it happens when one or more pigments float to the surface, originating a colour different from the expected one. It is caused by too great a difference in pigments' specific gravity and poor wetting of pigments. (1) The separation of one or more pigments from a coloured coating material containing mixtures of different pigments, causing streaks or areas on the surface of the coating material. (9) The tendency of some pigments to separate and float to the surface. Also called flooding and results in a streaked or spotty application. (12)
Flocculation	The formation of loose clusters of dispersed pigment particles in liquid coatings. (3) The formation of loosely coherent pigment agglomerates in a coating material. (9) To form masses of particles either by settling out or forming a gel. (12) Pigments form globules due to non-uniform pigment dispersion and spots of colour are noticeable. (23)
Flooding, floating, or mottle	Tendency of pigment particles to separate and concentrate in an area, such as the surface. (3) The separation of pigment particles in a coating material giving rise to a colour which, although uniform over the whole surface, is markedly different from that of the freshly applied wet film. (9)
Flop	A characteristic of metallic coatings to change color when viewed at different angles. (5)
Flow	The ability of a coating to level out and spread into a smooth film. Paints that have good flow usually level out uniformly with few brush or roller marks. (2) Measure of self-leveling; the nature of a coating which allows it to level or spread into a smooth film of uniform thickness before hardening. (5) The degree of levelling without brush marks. Excess flow may cause sagging. (12)
Flow coating	A coating application system where paint flows over the part and the excess coating drains back into a collection system. (3) Application method consisting of jet sprinkling excess product on to the item causing dripping of the excess, which is then recovered and reprocessed. (1) The application of a coating material either by pouring or by allowing it to flow over the object to be coated, and allowing the excess to drain off. (10)
Flow time	Time that elapsed from the moment when the material under test starts to flow from the orifice of the filled cup to the moment when the flow stream of material first breaks close to the orifice. (13)
Fluidized bed	Finely divided powders can be made into a fluid-like state by passing air through a porous plate bottom of a powder hopper. This permits the fluidized bed of powder particles to be used in dip tanks and to be transported in a manner similar to liquids. (3)

Flushable electrode	An anode in cathodic E-coating placed inside a semi-permeable membrane enclosure so that the excess solubilizer generated at the anode can be continuously removed by water pumped into the bottom of the enclosure. Flushable electrodes in anodic E-coating can also be used (but rarely are needed) for the cathode. (3)
Foam roller	A tool that is similar to a fabric roller but made from synthetic foam rubber. It is designed for clear, fine finishes. (2)
Force drying	A process in which the drying of a coating material is accelerated by exposing it to a temperature higher than ambient, but below that normally used for stoving materials. (8)
Forced drying	Various means of reducing drying times. Forced air with heating is the most common for PU and PE coatings. A flash off time at room temperature not exceeding 35° C is generally necessary to prevent blistering. (1) Drying at increased temperatures, but usually not over 150 °F. (12)
Ford cup	See VISCOSITY. (1)
Free radical polymerization	Reactive electrons that chemically bond to adjacent molecules and produce a cured paint film. Certain organic compounds will form highly reactive electron configurations by the action of UV light (or other activation sources). These reactive species are called free radicals because, to an extent, ‘free’ electrons are available for bonding. (3)
Frieze	A horizontal band of decoration around a room, building, mantle, etc. (2)
Frosting	The formation of a large number of very fine wrinkles in the form of frost-like patterns. (9) A frostlike appearance of a semi-opaque or translucent coating. (12)
Fungicide	An agent that helps prevent mold or mildew growth on paint. (2) A substance that retards and prevents the growth of fungi such as mildew. (4) Agent which protects wood from the action of fungi and moulds. (1)
Fusion	The melting of a powder coating into a solid film. (3)
Galvanized	Protected from rust by a thin coat of zinc (on iron or steel). (2)
Gas-liquid chromatography	The analyses of gaseous and liquid mixtures by separating the components carried in an inert gas stream through liquid-lined chromatographic columns; sometimes simply termed gas chromatography. (3)
Gassing	Volatiles that come from substrates in which pores or bubbles blow out during curing. Usually plastic or electrogalvanized steel cause gassing. (3) The formation of gas during storage of a coating material. (9)
Gel time	The interval of time at a given temperature required for a material to be transformed from a dry solid, through a liquid state, to a gel-like condition; measured in seconds at a given temperature. (5)
Gelled	Products which are allowed to thicken by adding certain other products. Can be a formula failure. (12)
Glass Plate Flow or Hot Plate Melt Flow (HPMF) or Incline Plate Flow	A measurement on an inclined surface when powder is in a molten state; usually measured in millimetres at a given temperature and angle. (5)
Glaze	See ANTIQUE STAIN. (1)
Gloss	A measure of the amount of light reflected off a surface. The more reflection, the higher the gloss. Gloss can be measured with photoelectric devices, which compare the reflected light versus the light originally falling on the surface at a given angle of reflection. (3) The ability of the finished surface to reflect light in a mirrorlike manner. The higher the gloss, the more scrubbable and durable the finish. Degrees of gloss include flat, velvet, eggshell, low lustre, semi-gloss and high gloss. (2) The luster, shininess or light reflection of paints and coatings. Gloss levels are measured using a 60° meter. Gloss levels and descriptions are categorized as follows (4):

Flat; 0 – 5 units @ 60 degrees

Eggshell; 5 – 20 units @ 60 degrees

Low Lustre/Satin; 15 – 35 units @ 60 degrees

Semi-Gloss; 30 – 65 units @ 60 degrees

Gloss; 65 + units @ 60 degrees

Surface reflection of directed light, measured in units; the most common angle of measurement is 60°; a 20° angle should also be considered for certain full gloss formulations and an 85° angle for low gloss products (ASTM D 523). (5)

The optical property of a surface, characterized by its ability to reflect light specularly. Classification by specular gloss shall be based on specular reflectance values when tested at 60° by the following categories (7):

- matt: reflectance up to 10;
- semi-matt: reflectance greater than 10 up to 35;
- semi-gloss: reflectance greater than 35 up to 60;
- gloss: reflectance greater than 60 up to 80;
- high gloss: reflectance greater than 80.

A degree of luster. The shiniest finish. (12)

Gloss degree

Indicates in percentage the ratio of incident light specularly reflected by the painted surface. It varies from 0 (minimum gloss = no specular reflection of incident light) resulting in egg shell appearance, to 100 (maximum gloss = specular reflection of incident light) resulting in mirror appearance or wet look. In common practice the gloss level of a coating is often identified according to the following scale (1):

- deep matt 1 to 10 gloss degrees
- matt 11 to 30 gloss degrees
- satin/semi-matt 31 to 50 gloss degrees
- semi-gloss 51 to 80 gloss degrees
- high gloss from 81 gloss degrees on

Gloss meter

An instrument using a standard scale to measure the amount of light reflected by paint. (2)

An instrument that measures the degree of gloss of a film by its reflectance. Also called a glossmeter. Most commonly used is a 60 degree meter which measures gloss at an angle of 60 degrees. (12)

Gloss retention

The ability to retain and preserve the original gloss for an extended period of time. (4)

The length of time a finish retains its gloss without flattening or dulling. (12)

Gouge hardness

The hardest pencil that will leave the film uncut for a stroke length of at least 1/8 in. (3 mm). (18)

Grain raising

Swelling and standing up of the wood grain caused by absorbed water or solvents. (2)

Roughness of wood caused by swelling of the grain, often caused by the use of waterborne coatings. (1)

Grain refiners

Agents used in water rinses prior to zinc phosphating or in the zinc phosphating bath itself to produce smaller crystals. Finer-grain zinc phosphate crystals provide superior corrosion resistance and paint adhesion. (3)

Graininess

A gritty appearance of a film due to the lumping of pigment. (12)

Graining

Simulating the grain of wood by means of specially prepared colours or stains and the use of graining tools or special brushing techniques. (2)

The imitation of the appearance of the wood etc., by the skilful use of suitable tools and coating materials. (10)

Grinning

The underlying substrate shows through the most recently applied coating. This can happen with an opaque coating, or with a woodstain system if the existing coating/timber and the

	top coat differ greatly in colour. (23)
Grit blasting	A process of abrasive blast-cleaning using particulate material, such as iron, steel slag or alumina (corundum). (10)
Grittiness	Defect of a coating film due to the presence of granules on the surface. (1)
Ground (electrical ground)	An object so massive that it can lose or gain overwhelmingly large numbers of electrons without becoming perceptibly charged. (3)
Ground coat	The base coat in an antiquing system. It is applied before the graining colours, glazing or other finish coat. (2)
H air-cracking	See CRACKING. (9)
Halogenated hydrocarbons (halogenated solvents)	Formed by substituting one of the halogen elements (chlorine, bromine, or fluorine) into a chemical compound to change both the physical and chemical natures of the compound. (3)
Hardboard	Reconstituted natural wood that is fabricated by reducing natural wood to fibres and then pressing the fibres together into panels of various thicknesses. (2)
Hardener	see CATALYST. (4)
Hardness	The resistance of the film to cutting, indentation, or penetration by a hard object. (3) The ability of a dried film to resist indentation or penetration by a solid object. (8) The capacity of a surface or film to resist scratching. (12)
Hardwood	Timber obtained from broad leafed or deciduous trees. (1)
Haze	The blurring of the outlines of reflected images by the formation of scattering particles on or just beneath the surface of the film. (9)
Heartwood	The central core of a tree, consisting of non-functioning tissue which is rich in tannins/extractives. The heartwood is often darker than the outer sapwood and generally denser and less absorbent. (23)
Heat-resistant coatings	Designed to resist degradation upon continuous or intermittent exposures to a predetermined elevated temperature. A San Diego Air Pollution Control District rule stipulates that the coating must withstand temperatures of 400 °F during normal use as determined by ASTM Method D-2485. (3)
Hiding power	The ability of a paint film to cover a surface from view. (3) The ability of a coating to obliterate the surface below it. (2) The extent to which a powder coating masks the color and pattern of the surface to which it is applied at a given film thickness (see also Contrast Ratio or Opacity). (5) Ability of a pigmented coating to hide completely the original colour of the substrate and give its own colour to it. (1) The ability of a coating material to obliterate the colour or the colour differences of a substrate. Classification by hiding power shall be by the following categories (7): <ul style="list-style-type: none"> - opaque: coating systems that obliterate all substrate colour and pattern but may not hide all surface profile; - semi-transparent: coating systems that do not totally obscure the wood surface; - transparent: coating systems that allow the wood surface to remain clearly visible. The ability of a paint product to hide previous coats or surface beneath. Opacity. (12)
High boilers	Solvents with a boiling point above 212 °F (Tail-end solvents). These solvents usually evaporate during baking. (3)
High gloss or extreme high gloss	Coatings that, when tested by ASTM D-523, show a reflectance of either 75, or more recently 85, or more on a degree meter. (3)
High gloss top coat	See GLOSS DEGREE. (1)

High Solids	A term applied to coating materials in which, by the choice of suitable ingredients, the content of volatiles (solvents) present is kept to a minimum, consistent with the maintenance of satisfactory application properties. (23)
High temperature coatings	Coatings certified to withstand a temperature of 1,000 °F for 24 hours. (3)
High volume-low pressure spraying	The process of atomizing paints and coatings by use of air under low pressure. Also known as HVLP. (4)
High-build	A definition of a paint or coating film which can produce a thick film in a single coat. Many high-build products are self-priming to gypsum board and concrete. (4)
High-solids	Solvent-borne coatings that contain greater than 50 % solids by volume or greater than 62 % (69 % for baked coatings) solids by weight. (3)
High-volume, low-pressure (HVLP) spray	Spray equipment used to apply coating by means of a gun which operates between 0.1 and 10.0 psig air pressure. The high volume of air is produced by a turbine. (3)
Hold-out	The ability of a paint film to dry to its normal finish on a somewhat absorptive surface. (2) Primers have hold out. The ability to seal surface so that the finish coat will be of even gloss and color. (12)
Holiday	A bare or thin spot in a painted area. (4) See MISS. (9)
Holidays	Voids in the dried paint film. (2)
Hot spots	Incompletely cured lime spots that bleed through the coating on a plastered wall. (2)
Hot spray	Reducing the coating to spray consistency with heat rather than solvent. (12)
Hot spraying	The spraying of a coating material that has been reduced in viscosity by heating rather than by addition of solvents. (10)
Hot water curing	A curing procedure which involves immersing parts in 180 °F water. Hot water curing is faster than oven curing for parts that act as a large heat sink but is normally not used because it results in reduced corrosion resistance. (3)
Hue	The name of a color. The property of a color by which it can be distinguished. Red, Blue, Yellow, etc. (12)
Humidity resistance	Ability of a coating and the substrate it is protecting to resist damage or degradation due to changes in humidity. (3) Measures a coating's ability to withstand exposure to 100% relative humidity at various temperatures (ASTM D 2247, usually tested on unscribed, pretreated panels). (5)
Hybrids	A combination of two or more powder resins formulated to provide specific properties. Examples are acrylic-epoxy hybrids and epoxy-polyester hybrids. (12)
Hydrocarbon solvent	An organic compound consisting exclusively of the elements carbon and hydrogen. They are principally derived from petroleum and coal tar, and include aliphatic, aromatic, and naphthenic solvent. (3)
Hydroxides	The chemical opposites of acids. Also known as caustics and alkalis. Examples are sodium hydroxide and potassium hydroxide. (3)
Hygroscopic	Describes a substance that has the property of readily absorbing moisture from the air. Hygroscopic materials, such as silica gel and calcium chloride, are used as dessicants. Thinly spread deposits of hygroscopic materials can absorb enough water to completely dissolve. (3) The tendency of a substance to attract or absorb moisture from the air. (5)
Impact fusion	The tendency of powder particles to fuse with other particles at points of impact in the application equipment during the application process. (5)
Impact resistance	Ability of a coating to resist deformation from a sudden blow. (3) Measures a coating's ability to withstand a force; expressed in inch-pounds; results can be

	affected by type of substrate, film thickness, or diameter of indenter (ASTM D 2794, Direct/Reverse). (5)
Impregnant	Liquid product which penetrates inside wood cells, without forming a film. Typical examples of such products are the protective wood stains used in joinery coatings (see also IMPREGNATION). (1)
Impregnated paper	Artificial veneer, which consists of a paper film, impregnated with resin. These can be of one colour, or copy wood grains and colours. (1)
Impregnation	Treatment of timber with impregnating liquids (see also IMPREGNANT). (1)
Incompatibility	Coatings or components which cannot be mixed. Usually results in the separation of solid particles, cloudiness or turbidity. (1)
Incompatible	Paints that should not be mixed together or should not be applied over another are said to be incompatible. For instance, water paints and oil paints should not be mixed. Epoxies might “lift” certain finishes. (12)
Induction time	A measurement of time to allow the chemicals of a multi-component paint or coating to react together. This measurement of time insures that this reaction has occurred. Also known as sweating & dwell time. (4)
Industrial paint	Paint that would normally be used to paint industrial items such as structural steel, chemical plants, and pulp and paper mills. It usually has greater chemical resistance and a faster drying time than regular house paint. (2)
Infrared (ir) cure	A method of curing powder which utilizes direct exposure to light energy in the IR region of the light spectrum. (5)
Inhibitor	A chemical additive that retards undesired chemical reaction such as corrosion, oxidation, drying, skinning, etc. (3) Primer or other material used to retard rusting or corrosion. (2)
Initiator	A chemical added to help start a chemical reaction such as polymerization. Its action is similar to that of a catalyst, except that it is usually consumed in the reaction. (3)
Inorganic polymers	Substances whose principal structural features are made up of homopolar interlinkages between multivalent elements other than carbon. This does not preclude the presence of carbon-containing groups in the side branches, or in interlinkages between principal structural members. Examples of such polymers are ethyl and butyl silicates, mica, clays, and talc. (3)
Intercoat adhesion	The adhesion between two coats of paint. (2) The ability of a coating to adhere to previously applied films. (5) Refers to adhesion between two coats of paint. (12)
Intermediate coat	The coating between a primer and a finish. Also known as a barrier coat, guide coat and tie coat. (4) Any coat between the priming coat and the finishing coat. (8)
Intumescent	A paint or coating that will provide a fire retardant finish. The film will swell and convert to a foam, thereby insulating the substrate. Not to be confused with Class “A” materials. (4) Any coat between the priming coat and the finish coat. (7)
Ionized air cloud	An invisible small cloud of air molecules that have picked up excess electrons around the tip of an operating electrostatic spray gun. The electrons from the power pack flow off the end of the needle electrode at the gun tip. When paint droplets pass through the ionized air cloud, they accumulate electrons that enable electrostatic attraction of the droplets to parts being coated. (3)
IR lamps	Lamps emitting heat in form of infrared radiation used to speed up solvent evaporation. Commonly used for the drying of stains or PU barriers. (1)
ISO-9000	The current standards, developed by the International Standards Organization, for the construction and maintenance of product manufacturing systems. (3)
Isocyanate	A compound containing the functional group $-N=C=O$. Isocyanates are crosslinked with

hydroxyls to form polyurethanes. (3)

Joinery

General term which refers to all kinds of frames (for example, window frames) and to relevant accessories. It is necessary to distinguish between indoor and outdoor joinery items, owing to obvious differences in requirements for protection. (1)

Joint cement

Cement used in dry wall construction as a bedding compound for joint tape and as a filler for nail holes. (2)

Joint tape

Special paper tape or paper-faced cotton tape used over joints between panels of wallboard to conceal the joint and provide a smooth surface for painting. (2)

Ketone

As used in paint, these are colorless volatile thinners or solvents with higher polarity values and good solvency power. (12)

Key process variables

Parameters having major effects on production process control charts can be maintained on these variables. (3)

Kick-out

The portion of binder that comes out of solution as small lumps. (3)

Kinematic viscosity

Ratio of the dynamic viscosity to the density of the liquid. The SI unit for kinematic viscosity is the square metre per second (m^2/s). The traditional unit is the centistokes (cSt); $1 \text{ cSt} = 1 \text{ mm}^2/\text{s}$. (13)

Lacquer

A clear or pigmented coating that dries quickly by evaporation of solvent. (2)

Coating composition based on synthetic thermoplastic film-forming material dissolved in organic solvent and dried primarily by solvent evaporation. Typical lacquers include those based on nitrocellulose, other cellulose derivatives, vinyl resins, acrylic resins, etc. (3)

See COATING. (1)

A finish or protective coating consisting of a resin and/or a cellulose ester dissolved in a volatile solvent. Sometimes pigment is added. Dries when solvents evaporate. (12)

Lacquer thinner

Solvent such as ethyl alcohol, ethyl acetate and toluene that is used for thinning or cleaning up lacquer. (2)

Laitence

A weak surface layer formed on concrete due to flotation. May be light in color and somewhat powdery. Laitence must be removed for good coating performance. (4)

Lamination

The process of combining or adhering one layer to another, such as coats of paint. (4)

Lapping

The area of overlap between two separate areas of the same paint. This area may appear glossier or hide better than surrounding areas due to the additional film thickness. (4)

Latent solvent

A liquid which cannot itself dissolve a binder but which increases the tolerance of the coating for a diluent. (3)

Latex

A water-thinned paint such as polyvinyl acetate, styrene butadiene or acrylic. (2)

Stable dispersion of polymeric solids in an aqueous medium. (3)

A general term describing a type of paint. Latex paints are water-based emulsions made with synthetic binders. Types of latex paints include 100% Acrylic, vinyl acrylic, vinyl latex and polyvinyl. (4)

Latex paint

See EMULSION PAINT. (8)

Leveling

Ability of a film to flow out free from ripples, pockmarks and brush marks after application. (2)

A powder's ability to flow into a smooth, uniform thickness (free from defects). (5)

The quality of spreading out into a smooth, level film. A paint with good leveling properties will dry without brush marks or the appearance of orange peel. (12)

Lifting

Raising and lifting of the surface as a result of the softening and penetration of a previous film by solvents in the paint being applied over it. (2)

Softening, raising and wrinkling of a paint film usually caused by strong solvents in the topcoat. (4)

	The softening and penetration of a dried film by the action of the solvent in a second film applied on it. This causes rising and wrinkling of the previous coat. (1)
	The softening, swelling, or separation from the substrate of a dry film resulting from the application of a subsequent coat or chemicals used as a solvents. (9)
	When the solvents of the topcoat penetrate the coat underneath and cause wrinkling. Usually penetrates the undercoat and breaks the adhesion. (12)
Light fastness	Ability of a coating or of a coated timber to retain its original colour when exposed to light. Sunlight, and particularly its UV part, can alter the colour of natural wood and stains producing yellowing of timber and discoloration of stains. Coatings will add their own yellowing to natural yellowing of timber and discoloration of stains on aging. Also pigmented coatings (especially white) are sensitive to yellowing in time. The presence of antioxidants and UV absorbers delays yellowing and discoloration. Light fastness can be further increased by choosing appropriate hardeners, or special coating families (such as acrylic-urethane coatings). (1)
Light reflectance value (LRV)	The amount of light reflected off of a specific color. Light colors have a higher LRV and dark colors have a lower LRV. (4)
Linseed oil	A drying oil used in paint, varnish and lacquer. (2) Drying oil made from the Flax seed. Used as a solvent in many oil-based paints. (4)
Lint-free roller	A fabric roller, designed not to “shed” lint, that is suitable for fine finishes and/or alkyd paint. (2)
Litre	A metric volume measurement equal to a little less than one imperial quart. (2)
Local film thickness	The mean of the specified number of thickness measurements made within a given reference area. (17)
Long oil alkyd based coatings	See COATINGS. (1)
Luster	The appearance of depth as obtained by multiple coats of varnish. See also GLOSS. (12)
Maintenance	Operations carried out with suitable products to preserve items in time and to ensure longer-lasting aesthetic and functional properties. (1)
Mar resistance	A coating’s ability to withstand contact without blemishing. (5)
Marbling	The imitation of the appearance of polished marble by the skilful use of suitable tools and coating materials. (10)
Marine varnish	Varnish that is specially designed for immersion in water and exposure to the elements, including the marine atmosphere. It is often called spar varnish. (2)
Masking	Temporary covering of areas not to be painted. (2) A temporary covering of that part of a surface which is to remain unpainted. (10) To protect areas by masking tape, etc., from paint application where it is not wanted. (12)
Masking paper	A kraft paper that is held in position by a strip of masking tape and used to temporarily protect surfaces adjacent to those being painted. (2)
Masking tape	Easily removable tape used to temporarily cover bands or small areas next to the area to be painted. It is important to remove masking tape promptly, because it is likely to dry out and leave a troublesome residue if left for more than two days or exposed to sunlight and heat. (2)
Mastic	A heavy-bodied pastelike coating of high build. Mastic is often applied with a trowel. (2) A heavy-bodied, high-build coating. (4)
Material safety data sheet (MSDS)	A document that lists hazardous ingredients and safety information related to products used in the workplace. (2) An information sheet that lists any hazardous substances that comprise one percent or more of the product’s total volume. Also lists the procedures to follow in the event of any emergency such as fire, explosion, contact with skin and eyes, etc. Paint and coating

	manufacturers are required to provide MSDS to all purchasers of their products. (4)
Matt topcoat	See GLOSS DEGREE. (1)
Maximum local thickness	The highest value of the local thickness found on the significant surface area of a particular article. (17)
Mean film thickness	The mean value of a specified number of local thickness measurements that are evenly distributed over a significant surface area, or the result of a gravimetric film thickness determination. (17)
Measurement area	The area over which a single measurement is made. (17)
Medium	The sum total of the constituents of the liquid phase of a coating material. This definition does not apply to powder coating materials. (8)
Medium density fibreboard (MDF)	Agglomerate of fine wood particles, bonded by special glue and pressed to obtain boards. Painting properties are superior to chip boards. (1)
Meq (milliequivalents)	The concentration of E-coat solubilizer in the bath. (3)
Metal temperature	The temperature of a part at any time during the cure cycle; varies based upon mass of part and dwell time. (5)
Metallics	Paints that include metal flakes. (2)
Mho	Unit of conductance equal to the reciprocal of the ohm. (3)
Microporous	See Moisture Vapour Permeable. (23)
mil	Unit of measuring film thickness. 1 mil is one thousandth of an inch (0.001 inch). (12)
Milage	Describes the coverage rate of paint and coatings. Usually listed in square feet per gallon. (4)
Mildew resistance	The ability of a coating to resist the growth of molds and mildew. Mildew is particularly prevalent in warm, humid climates. (2)
Mildewcide	An agent that helps prevent mold or mildew growth on paint. (2) An agent that helps prevent mold and mildew growth on paint films. (4)
Mileage	A general term which indicates the coverage obtained from a coat of paint. Synonymous with coverage. (12)
Mill scale	A layer of oxides formed on steel during manufacturing. Mill scale must be removed for good coating performance. (4) The layer of iron oxides that are formed during the hot rolling of steel. (10)
Mills	Machines for grinding pigment and vehicles, such as Kady Mills, Ball Mills, Cowles Hi-Speed, dispersion Mills, etc. (12)
Mils	The measurement unit of either wet or dry paint films: 1 mil equals one one-thousandth of an inch (.001); 1 mil equals 25 microns. (4)
Mineral spirits	Petroleum solvent for paint thinning and clean-up. (2) A paint thinner, reducer and clean-up solvent for alkyd and oil-based paints and coatings. Mineral spirits is a solvent distilled from petroleum. (4)
Minimum local film thickness	The lowest value of the local thickness found on the significant surface area of a particular article. (17)
Miss	The absence of a dry film from certain areas of the substrate. (9)
Mist coat	A thin coat of paint by spray application. Also known as tack coat. (4) A semi-transparent spray coat of paint. (12)
Mixing ratio	Quantity of hardener that is to be added to 100 parts of coating in order to obtain curing of two-pack products. (1)
Mixing ratio, by volume	The proper mixing ratio, by volume, of each component in a kit. (4)

Moisture vapour permeable	Often termed 'microporous', the property of a coating to allow the passage of moisture in the form of vapour, not liquid, into and out of the substrate. (23)
Moisture vapour transmission (MVT)	The migration of moisture vapour through a substrate. MVT is measured in perm units. (4)
Molecule	The smallest particle of a substance that retains all the properties of that substance and is composed of one or more atoms. Water, for example, consists of molecules having two hydrogen atoms and one oxygen atom. The chemical formula, H ₂ O, indicates this molecular composition. Organic polymers often have many thousands of atoms per molecule. (3)
Molten salt bath	A mixture of inorganic salts melted at temperatures between 650 °F and 900 °F. Painted items immersed in these are rapidly stripped by combustion of the paint in the molten salt bath. (3)
Mud cracking	The formation of deep cracks during drying, occurring primarily with highly pigmented paints applied in thick layers on porous substrates. (9)
Multicolor finishes	Paints that contain flecks of different colors different from the base color. Also known as Speckled finishes. (4)
Multi-pack product	A coating material that is supplied in two or more separate components which have to be mixed before use in the proportions laid down by manufacturer. (8)
Nailhead rusting	Rust from iron nails that bleeds through the coating and stains the surrounding area. (2)
Nap	The length of fibres in a paint roller cover. (2)
Newtonian flow	Type of flow exhibited by a material in which the ratio of the shear stress to the velocity gradient does not vary either with time or with the velocity gradient. When variations in this ratio are small, the effect on viscosity of mechanical disturbance, such as stirring, is negligible and the material is said to have near-Newtonian flow. (13)
Nitrocellulose	A binder (resin) based on polymer from cotton cellulose. Nitrocelluloses were primarily used in lacquers and were widely used from the 1920s to the 50s on automobiles. (3)
Nitrocellulose coatings	See COATINGS. (1)
Non-ferrous	Describes metals that do not contain iron. Non-ferrous metals include zinc, aluminium, copper, etc. A simple method for determining if a metal is ferrous or nonferrous; non-ferrous metals are not magnetic. (4)
Non-toxic	Non-poisonous. (4)
Nonvolatile	A paint's solids content the solids left over after the solvent evaporates. (2) The portion of paint left after the solvent evaporates. Sometimes called the solids content. (4)
Non-volatile	Solids. (12)
Non-volatile matter	The residue obtained after evaporation under specified conditions of test. (8)
Ohm	A standard unit of resistance to electrical flow. (3)
Ohmmeter	A device that measures (in units of ohms) electrical resistance in a circuit. (3)
Oil base	Coatings which form films through crosslinking of unsaturated plant oil (drying oils) in the presence of oxygen. (3)
Oil length	Usually refers to the drying time of an alkyd paint. Long oils = slower drying; short oils = faster drying. (4)
Oil paint	Oil-based paint that contains oil as the basic vehicle ingredient. Oil paint can be designed for interior or exterior use. It must be thinned and cleaned up with solvent. Pure oil-based paints have largely been replaced by alkyd paints. (2)
Omega loop	The conveyor for rotating disk paint applicators that is shaped to produce a circular path around the vertically oriented disk to deliver paint from all 360 ° of its circumference. The term was derived because the shape of the conveyor resembles the capitalized form of the

	Greek letter. (3)
Opacity	<p>The ability of a paint to hide the previous surface. (2)</p> <p>Describes the hiding power of a paint or coating. (4)</p> <p>The ability to hide the substrate at a given film thickness (see also Contrast Ratio or Hiding Power). (5)</p> <p>Ability of a paint to hide the previous surface or color. (1)</p>
Opaque	<p>See PIGMENTED COATINGS. (1)</p> <p>Not translucent or transparent, i.e. a coating which will obliterate the colour of the underlying surface to which it is applied. (23)</p>
Opaque coating	A coating that hides the previous surface. (2)
Open pore	Application system which does not completely fill the wood pores. (1)
Orange peel	<p>An irregularity in the surface of a paint film resulting from the inability of the wet film to level out after being applied. (3)</p> <p>A condition describing the appearance of a dimpled paint film. Caused by excessive film build, incorrect application technique. Also describes a type of textured finish available. (4)</p> <p>Surface defect consisting in the dimpled appearance of the dry coating film resembling the peel of an orange. (1)</p> <p>Film having the roughness of an orange due to poor roller or spray application. (2)</p> <p>An effect resembling the texture of the surface of an orange. (9)</p> <p>A film that has the physical appearance of an orange peel caused by improper spray application or the application of some finishes by roller or spray. (12)</p> <p>The surface of the dried coating film resembles the skin of an orange. This effect is often the result of the use of a roller for the application of a coating, particularly if it is rolled out thinly and unable to level out to a smooth film. (23)</p>
Out-gassing	Air or gas that escapes from the sub-surface beneath or within the coating and causes blisters, bubbles, or small holes; frequently occurs with zinc or aluminum castings or galvanized steel. (5)
Oven	Plant for forced drying of coatings by means of temperature (hot air oven) or other energy source (IR oven, UV oven). (1)
Overbake or overcure	<p>Exposure of the coating to a temperature higher, or for a longer period of time, or both, than recommended for optimal curing; the condition may adversely affect the appearance and the properties of the coating. (3)</p> <p>The application of heat using more time and/or temperature than is required for cure which often causes the coating to become too brittle; color and gloss may be adversely affected. (5)</p>
Overspray	<p>Any portion of a spray-applied coating that does not land on a part and which is deposited on the surrounding surfaces. (3)</p> <p>Atomized paint from spray equipment that was not applied to its intended target. Also known as waste. (4)</p> <p>Material not deposited on the part or rack. (5)</p> <p>In spray applications, quantity of coating that does not fall on the item to be coated and is therefore wasted, with ensuing environmental and economical disadvantages. (1)</p> <p>The sprayed coating material that does not impinge on the surface to be coated. (10)</p> <p>As the name implies. Paint sprayed in areas surrounding target objects. (12)</p>
Oxidation	A type of drying and curing process that requires the paint or coating to be exposed to oxygen in order for the product to completely dry. Also known as air dry and air cure. (4)
Oxygenated solvents	Volatile organic compounds (VOCs) that contain oxygen in addition to carbon and hydrogen. VOCs include alcohols, esters, ketones, and ether-alcohols. (3)

Pad	Piece of cloth containing a mass of wool or cotton threads which, conveniently soaked, is used to coat antique furniture with proper coatings. (1)
Paint	<p>A pigmented liquid that dries to form an opaque, solid film and provide decoration and protection. (2)</p> <p>A mixture of pigments, binders and solvents that form a continuous film that can be decorative and protective. (4)</p> <p>See COATINGS. (1)</p> <p>A pigmented coating material, in liquid or in paste or powder form, which when applied to a substrate, forms an opaque film having protective, decorative or specific technical properties. (7) (8)</p>
Paint remover	A compound that softens old paint or varnish, permitting loosened material to be scraped off. (2)
Paint thinner	Thinner. (2)
Particle size	The average diameter of powder particles; affects application properties. (5)
Particle size distribution	The overall range of particles (from coarse to fine) resulting from the grinding process; measured in microns; varies with product. (5)
Patina	See ANTIQUE STAIN. (1)
Peak amperage	The maximum amperage due to the initial surge of voltage and the conductive metallic object be coated. Amperage peaks out within 5 to 15 seconds and falls off very rapidly as the film builds up and the object becomes insulated. (12)
Peeling	<p>Detaching of a dried paint film in large pieces. Peeling is usually caused by moisture or grease under the painted surface. (2)</p> <p>Detachment of a dried paint film in relatively large pieces. Usually caused by moisture or contamination under the painted surface. (4)</p> <p>Failure of a coating film to maintain adhesion with its substrate. Sheets or ribbons of the film detach from the substrate. The condition results from contaminated surfaces or excessive differences in polarity and thermal expansion characteristics between the surface and the film. (3)</p> <p>Detachment of the coating film from the substrate usually caused by prolonged weathering. (1)</p> <p>The spontaneous detachment from the substrate of areas of the film due to loss of adhesion. (9)</p> <p>Loss of adhesion. Stripping paint film from the surface. (12)</p>
Pencil hardness	Relative rating of a coating's ability to resist scratching; measured as mar and/or gouge (ASTM D 3363). (5)
Pencil hardness (16)	<p>The resistance of the surface of a paint film to marking, or the formation of some other defect, as a result of the action of a pencil with a lead of specified dimensions, shape and hardness which is pushed across the surface.</p> <p>Marking by pencil leads covers a range of defects in the surface of the paint film. These defects are defined as follows:</p> <ol style="list-style-type: none"> a) Plastic deformation : a permanent indentation in the paint surface without cohesive fracture. b) Cohesive fracture : the presence of a visible scratch or rupture in the surface of the paint film, material having been removed from the paint film. c) Combinations of the above. <p>These defects can occur simultaneously.</p>
Permeate	The output ultrafiltration, called ultrafiltrate or permeate. (3)
pH	Value taken to represent the acidity or alkalinity of an aqueous solution and defined as the logarithm of the reciprocal of the hydrogen-ion concentration of a solution. The scale ranges from 1, for highly acidic solutions, to 13, for highly basic or alkaline solutions.

Neutral solutions have a pH of 7. Because the scale is logarithmic, the intervals are exponential. (3)

The chemical symbol that together with a number describes the alkalinity or acidity of a solution. 7 is neutral. Below 7 indicates acid condition. Above 7 indicates alkaline condition. (12)

Phenolic resins	Resins comprised by condensation of phenols and aldehydes. (3)
Phosphating	<p>A pre-treatment for steel or certain other metal surfaces by chemical solutions containing metal phosphates and phosphoric acid as the main ingredients, to form a thin, inert adherent, corrosion-inhibiting phosphate layer that serves as a good base for subsequent paint coats. (3)</p> <p>The chemical pre-treatment of certain metals using solutions essentially consisting of phosphoric acid and/or phosphates. (10)</p>
Photoinitiator	Compound capable of absorbing UV light, thus generating an active substance which can initiate a polymerization reaction in UV coatings. (1)
Pickling	The removal of rust and mill scale from ferrous substrates by means of an acidic solution usually containing an inhibitor. (10)
Pigment	<p>Finely ground insoluble particles dispersed in coatings to influence properties such as colour, corrosion resistance, mechanical strength, hardness, durability, etc. Particles may be natural or synthetic and also inorganic or organic. (3)</p> <p>A substance, generally in the form of fine particles, which is practically insoluble in media and which is used because of its optical, protective or decorative properties. In particular cases, for example corrosion-inhibiting pigments, a certain degree of water solubility is necessary. (8)</p>
Pigment volume	The amount of pigment, by volume, in the non-volatile portion of the paint. (12)
Pigment volume concentration (P.V.C.)	The ratio, expressed as a percentage, of the total volume of the pigments and/or extenders and/or other non-film forming solid particles in a product to the total volume of the non-volatile matter. (8)
Pigmented coatings	Coatings containing pigments which completely hide the substrate giving their own colour to it (see also HIDING POWER). (1)
Pigments	<p>Paint ingredients that are used mainly to provide color and opacity. (2)</p> <p>The powder portion of the paint film providing hide, corrosion resistance and color. (4)</p> <p>Clobbered substances which give the dried film both colour and hiding power. They can be organic or inorganic and are not soluble in solvents. (1)</p>
Pin heads	Formation of small regular heads on the surface of the topcoat after drying. They are usually related to high gloss topcoats. Caused by the air or the solvent trapped inside the film during drying. (1)
Pin holes	The appearance of fine pimply defects in a dried film, due to bubbles or other causes, which results in small holes in the film. It is caused by the air or the solvent trapped inside the film during drying. (1)
Pinhole	<p>Very small holes in paint film, usually not deep enough to show the undercoat. (2)</p> <p>A film defect characterized by small, pore-like flaws in a paint or coating which extend entirely through the film. (4)</p>
Pinholing	The presence in the film of small holes resembling those made by a pin. (9)
Pin-holing	Tiny round breaks in a paint film giving the appearance of a pin-hole. (12)
Plasticizer	A substance added to a coating material to make the dry film more flexible. (8)
Polar	Descriptive of molecules where the atoms and their electrons and nuclei are arranged so that one end of the molecule has a positive electrical charge and the other end of the molecule has a negative electrical charge. The greater the distance between the two charged ends, the higher the polarity. Polar molecules ionize in solution and impart electrical conductivity. (3)
Polishing	Operation carried out on high gloss top coats (mainly PU) or wax PE in order to get rid of

dust particles incorporated in the film and to build up the gloss. It consists of 2 main stages (1):

- fine sanding of the coating, using several paper of increasing fineness of grit such as 600 – 800 – 1000,
- polishing of the surface by means of fine abrasive waxes, applied and rubbed by special brush rollers.

Polyester	A polymer in which the monomer units are linked by the functional group –COO-. Polyester has been used as thermoplastic powder coating, and as the following thermosetting powder coatings: epoxy polyester hybrid powder, urethane polyester powder, and polyester TGIC powder. (3) A group of resins made from the reaction of dicarboxylic acids with dihydroxy alcohols. This is a special type of alkyd resin. (12)
Polyester coatings	See COATINGS. (1)
Polyethylenes	Thermoplastic resins composed of polymers of ethylene (CH ₂ CH ₂). Polyethylenes are normally translucent, tough, waxy solids that are unaffected by water and a large range of chemicals. Frequently used in powder coatings. (3)
Polymers	A high-molecular-weight organic compound, natural or synthetic, with a structure that can be represented by a repeated small unit, or mer. (3)
Polypropylenes	Tough, lightweight thermoplastic resins composed of polymers of propylene (CH ₂ CHCH ₂). They are commonly used in powder coating. (3)
Polyurethane	Coatings ranging from hard glossy enamels to soft, flexible coatings. With thorough surface preparation, polyurethanes provide good to very good adhesion, hardness, flexibility and resistance. (2) A type of resin that is offered in a wide range of paints and coatings. Polyurethanes are available in one- and two-component versions. Polyurethanes offer good adhesion, color and gloss retention, and favourable chemical-resistance properties. (4)
Polyurethane coatings	See COATINGS. (1)
Polyvinyl acetate (PVA)	A synthetic resin largely used as a vehicle for many latex paints. (2)
Popping	Eruptions in a film of coating after it has become partially set so that craters remain in the film. (3)
Postformability	The ability of a cured coating to withstand severe bending without the appearance of cracks. (5)
Pot life	The length of time a coating material is useful after the original package is opened or after a catalyst or other ingredient is added. (3) The period during which a two-part paint can be applied after it has been mixed. (2) A measurement of time regarding the mixture of a multi-component paint mixture. Pot life is the time that the product remains usable before the reactive ingredients solidify. (4) Period of time within which the coating can be applied, after the blending operation, before polymerization causes a viscosity increase which makes application impossible. It is strongly affected by temperature (it decreases as temperature increases). (1) The maximum time during which a coating material supplied as separate components should be used after they have been mixed together. (8)
Potable	Suitable for drinking. (5)
Powder coating material	A solvent-free coating material in powder form which, after fusing and possible curing, gives a continuous film. (8)
Powder coatings	Any coating applied as a dry (without solvent or other carrier), finely divided solid which adheres to the substrate as a continuous film when melted and fused. (3)
Power conveyor (continuous)	An electrically driven cable- or chain-power conveyor that is mechanically attached to hoods to hang parts to be painted. The conveyor is used to carry parts through the painting

	process operations. When the line is operating, all individual hooks on the line will continue to move and maintain their spacing. (3)
Power-and-free conveyor	A power conveyor using a separate pusher chain unattached to paint hooks and riding freely on a separate support beam (as distinguished from a continuous power conveyor). This conveyor allows variable parts spacing and for parts to be held stationary even when the pusher chain is moving. (3)
Practical spreading rate	The spreading rate which, in practice, is obtained on the particular substrate being coated. (8)
Precursor	A chemical compound which is released into the atmosphere, undergoes a chemical change, and leads to a new (secondary) pollutant. VOCs are precursors to ozone. (3)
Preparation grade	The classification describing the quality level of the cleaning achieved by a given procedure. (10)
Pressure pot	Various-sized paint tanks with delivery tubes extending to the bottom inside the tank. The tanks are pressurized with compressed air to force paint to the application device and have bolt-on covers. (3)
Pressurization	To prevent defects due to dust and impurities, the air of a coating workshop is filtered and kept above atmospheric pressure. (1)
Pressurized booth	Spray booth where pressurisation is applied. (1)
Pre-stained veneer	A veneer which has already been stained by the manufacturer. (1)
Pretreatment	The preparation of a part prior to the application of a coating powder in order to improve adhesion and corrosion resistance. (5)
Prime coat	Primer. (2)
Primer	The base coat, or first complete coat, of a paint system that is applied to an uncoated surface. Primer can be latex or alkyd (oil) paint. (2) The first complete coat of paint of a painting system. Primers are designed to provide good adhesion to the substrate while providing a surface of even porosity for the succeeding coats of paint. (4) A coating applied to a surface to improve adhesion of a topcoat and/or improve corrosion resistance. (5) See BASECOAT. (1)
Primers	Coatings that are designed for application to a surface to provide a firm bond between the substrate and subsequent coatings. (3) Undercoats which bind topcoat to substrate. (12)
Priming coat	The first coat of a coating system, applied to a substrate. (7) (8)
Process capability	A processes ability to consistently produce a high quality product for current production standards. (3)
Propellant	The gas used to expel materials from an aerosol container. (2)
Putty	Substance used to fill gaps and cracks in the item to be coated, with high filling properties and good sandability. (1)
Putty knife	A flat-bladed tool for filling cracks and holes with spackling compound. (2)
QUV	Accelerated weathering test performed at elevated temperatures in which coated panels are exposed to regular cycles of intense UV light alternated with dark cycles where water is allowed to condense on the panels. (5)
Rain spots	A condition caused by raining on a newly applied finish before it has set. (12)
Reactive diluent	A liquid which is a VOC during application and in which, through chemical reaction such as polymerization, 20 % or more of the VOC becomes an integral part of the finished coating. (3)
Rebound	Similar to OVERSPRAY. The atomized paint was applied to its intended target but

	bounced off due to excessive material pressure during spray application. (4)
Reciprocator	An automatic device to move a paint-applying tool in alternating directions along a straight or slightly curved horizontal or vertical path. (3)
Reclaim	Any material not deposited onto parts; usually mixed with virgin material for future applications. (5)
Recoat time	The period that must elapse between applications of coats of paint. (2)
Recoat window	A measurement of time between the application of a primer or intermediate coat and an additional coat. (4)
Recoatability	A cured coating's ability to accept another coat. (5)
Recoating time	In our technical data sheets a time is shown for repeated coats of a base coat without sanding in between. Recoating a base with top coats always implies sanding. If sanding and top coating come too early, lifting of the base could occur, affecting the quality of the finish. (1)
Reconstituted veneer	Special veneer obtained by gluing together and cutting several layers of wooden sheets properly stained. By means of differently angled cuttings it is possible to obtain different grain patterns, thus reproducing natural veneers or creating new effects. (1)
Red label goods	Products requiring a red label for shipment according to DOT regulations. The requirement is for products having a flash point below 100°F. (12)
Reduce	To thin in viscosity by adding a thinner or solvent. (12)
Reducer	A material which lowers the viscosity but is not necessarily a solvent for the particular film former. Also known as thinner. (4)
Reference area	That part of the significant surface area within which a specified number of single measurements are required to be made. (17)
Reflectance	The percent of light reflected at a given wavelength; the illuminant, degree of observer and the wavelength must be specified; color (not gloss) dependent – whites will have the highest values. (5)
	Ratio of the intensity of reflected light to that of incidental light. See GLOSS DEGREE. (1)
Reflectivity	The reflectance of a coating at a film thickness such that any further increase in thickness will not affect the amount of light reflected. (5)
Relative humidity	A scientific way of measuring moisture in the air. The percentage ratio of water vapour in the air to the amount required to saturate it at the same temperature. (12)
Resin	A natural or synthetic material that is the main ingredient of paint. It binds the ingredients together and improves the coat's adhesion to the surface. (2)
	A natural or synthetic material that is the main ingredient of paints and coatings. Resins, also known as binders, bind the ingredients together. Resins also provide the adhesion properties for the finish. (4)
	The polymer (plastic) component of a paint that cures to form a paint film. Also known as binder or vehicle. (3)
	Non-volatile solid or semi-solid exudation from the pine trees and plants. Also synthetically made by polymerizing molecules. Examples of natural resins are rosin and dammar. Types of synthetics are alkyds, phenolics, etc. (12)
Resistivity	See CONDUCTIVITY. (1)
Retarder	A solvent or agent that is added to a paint or coating to slow the drying or curing process. Also known as retarding thinner. (3)
Retarders	Solvents added to a coating to slow down a chemical or physical change, such as the rate of evaporation. (4)
Reverse osmosis	In reverse osmosis, high pressures are applied to force water out of the concentrated solution, often to obtain pure (or purer) water. By the natural process of osmosis, solvent is driven through a semi-permeable membrane separating solutions of different concentrations. (3)

Reverse roller coater Machine similar to the roller coater but with an additional pair of metal and rubber roller. The rubber roller of the second pair rotates in a direction opposite to that of the first pair. Since both come in touch with the panels moving on a conveyor underneath, a higher quantity of coating is transferred to them with a better levelling. (1)



REVERSE ROLLER COATER MACHINE

RIM Flexible substrate. Reaction Injection Molded urethane. (12)

Ringing The occurrence of circular spots in a sprayed repair area (spotting). (3)

Roll coating Process by which a film is applied mechanically to sheet or strip material. (3)

Roller A paint application tool consisting of a revolving cylinder covered with fabric, polyester foam, lamb's wool, etc. (2)

Paint application tool having a revolving cylinder covered with lambswool, felt, foamed plastics or other materials. Suitable for plain surfaces. (1)

Roller application A coating process whereby the coating material is applied by means of a hand-held roller. (10)

Roller coater Coating machine composed by a pair of rollers, a metal one and a rubber one, tightened together and rotating in opposite direction. On operation they are covered by a thin layer of coating, which is continuously pumped in between them. The panels to be coated move on a conveyor, come in touch with the rubber roller, and the coating is transferred onto them. Two special types of roller coater are available:



ROLLER COATER MACHINE



PRECISION ROLLER COATER

It differs from a conventional roller coater because of the possibility of inverting the rotation of the metal roller, thus applying a thinner layer of coating. See also REVERSE ROLLER COATER. (1)

Roller coating A coating process whereby flat articles are passed between two or more horizontally-mounted rigid rollers from which a coating material is transferred to one or both faces of the sheet or article. The process can be used both to individual items (e.g. panels, flush doors ...) and strip materials. (10)

Ropiness A stringy look to the paint film. Ropiness is a result of the paint not flowing evenly onto the surface. (2)

A paint finish that dries with a "stringy" appearance due to the lack of flowing capabilities of the paint. (4)

An effect characterized by pronounced brush marks that have not flowed out because of the poor levelling properties of the coating material. (9)

Rot Decomposition of timber by fungi resulting in softening, progressive loss of strength and mass and often a change of texture and colour. (7)

Runnings Drips occurring during coating application on vertical components, usually due to excess coating or lack of thixotropy. Synonym with DRIPPINGS, SAGGINGS (1)

Runs Blemishes on the film that are caused by excessive flow of the coating. (2)

See CURTAINS. (4)

See SAGS. (9) (23)

	Usually caused by improper consistency of paint or applying too heavily. (12)														
Rust grade	A classification describing the degree of rust formation on a steel surface prior to cleaning. (10)														
Rust preventive paint or primer	The first coat of paint applied directly to iron or steel structures to slow down or prevent rust. (2)														
Rusting (face and/or scratch)	The appearance of rust (corrosion) on the surface of the damaged paint. Scratch rusting occurs where the film has been damaged and rusting appears on the scratched area. (3)														
Sagging	The downward flow of a coating film as a result of the film being applied too heavy or too fluid a wet coat. (3)														
Sagging	See RUNNINGS. (1)														
Sags	Runs or sags in paint film that flows too much during application. Sags are usually caused by applying too heavy a coat of paint or thinning the paint too much. (2) See CURTAINS. (4) Local irregularities in the film thickness caused by the downward movement of a coating material during drying in a vertical or in an inclined position. Small sags may be called runs, tears or droplets, large sags may be called curtains. (9) The sagging of the paint. A curtain effect. Usually caused by applying too heavy a coat of paint or thinning too much. (12) Movement and tears of coating soon after application to vertical substrates. In severe situations, also known as 'curtains'. (23)														
Salt spray resistance	The degree of corrosion determined at the scribe based upon a prescribed time period; should be tested with a control (ASTM B 117). (5)														
Salt spray testing	A paint test that exposes the dry film to salt solution to accelerate the corrosion process. (3)														
Sanding	Operation carried out by means of sandpaper or other abrasives, to prepare the bare timber for the first coat of paint or the base coat for the topcoat. (1) An abrasive process used to level and/or roughen the substrate. (10)														
Sanding sealer	A type of paint that is applied to wood substrates to seal the surface and fill any minor imperfections. Sanding Sealers are transparent, dry fast, and may be applied, sanded and topcoated within the same day. (4)														
Sanding time	Time at which a base coat can be sanded easily and properly. (1)														
Sandpaper	A sheet of abrasive-coated paper that is used for smoothing rough surfaces. (2) This is used for sanding timber to be coated or to sand previously applied coats of paint. The different types are defined by a number which refers to the number of the mesh of the sieve contained in a square inch and through which abrasive grains, identified by such number, have passed. Following table shows most common sand paper types (1):														
	<table border="1"> <thead> <tr> <th>PAPER GRIT</th> <th>DEFINITION</th> </tr> </thead> <tbody> <tr> <td>40, 60, 80</td> <td>very coarse</td> </tr> <tr> <td>100, 120, 150</td> <td>coarse</td> </tr> <tr> <td>180, 200, 240</td> <td>medium</td> </tr> <tr> <td>320</td> <td>fine</td> </tr> <tr> <td>400, 500, 600</td> <td>very fine</td> </tr> <tr> <td>800, 1000</td> <td>ultra fine for polishing</td> </tr> </tbody> </table>	PAPER GRIT	DEFINITION	40, 60, 80	very coarse	100, 120, 150	coarse	180, 200, 240	medium	320	fine	400, 500, 600	very fine	800, 1000	ultra fine for polishing
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Sandscratch swelling	A paint defect where repair coat solvent soaks into scratches from surface preparation and causes paint swelling. (3)														
Saponification	The chemical formation of “soap“ on a paint film. (4)														
Sapwood	The outer wood in a tree, just beneath the bark in tree trunks. This is the living tissue in a														

	tree. (23)
Sash brush	An angled brush used for cutting-in. (2)
Satin finish	Semi-gloss finish. (2) Suggestive of satin especially in smooth lustrous appearance. (1)
Scotch brite	Abrasive lapping wheel usually used to sand profiles. (1)
Scratch hardness	The hardest pencil that will not rupture or scratch the film. (18)
Scrubability	The ability of a paint film to withstand scrubbing and cleaning with water, soap, and other household cleaning agents. (2) The ability of a paint or coating film to withstand scrubbing and cleaning with water, soap, detergent and other mild, non-abrasive household cleaning agents. (4)
Sealer	A coating used to prevent excessive absorption of subsequent coats into a porous surface. (2) See BASECOAT. (1) A primer which does not allow succeeding coats to penetrate. Also seals in material that might otherwise bleed through the surface. (12)
Sealers	A liquid coat applied to porous substrates such as wood and plaster to prevent the substrate from absorbing subsequent coatings. (3)
Seeding	A lumping of pigment or the vehicle become gelatinous, forming relatively large particles in the coating. (12)
Seeds	Small undesirable particles or granules other than dust that are found in a paint, varnish or lacquer. (2)
Self priming topcoat or self sealer	A coating which can be used both as a basecoat and as a top coat, compromising the properties of the two families. (1)
Semi-gloss	A degree of gloss that is glossier than low lustre but not as glossy as high gloss. (2)
Semi-transparent	A degree of ability to hide the underlying surface greater than transparent but less than opaque or solid color. (2) A degree of opacity (hiding) greater than transparent but less than opaque. (4)
Service Temperature (continuous or intermittent)	The temperature which a finish is able to withstand for an extended period of time or number of cycles without degradation. (5)
Service temperature limit	The maximum temperature recommended for that specific paint film under dry heat conditions. (4)
Set up	The quality of a film that has dried until it is a film. The film is said to have "set up". (2) A paint or coating that has dried so that it is firm is said to have "set-up". (4)
Settling	Paint separation in which pigments and other solids accumulate at the bottom of the container. (2) The deposition of a residue on the bottom of the can of a coating material. A compact sediment cannot be redispersed by simple stirring. (9) When the pigment separates from the vehicle and settles to the bottom of container. (12)
Shading	Staining operation carried out on sanded base coat, in order to harmonize the color and to hide oversanded areas. (1)
Sheen	Gloss. (2) The level of gloss or light reflection of a paint film measured at an 85° angle. Flat and low luster finishes are more accurately measured using this method. (4) See GLOSS DEGREE. (1) Gloss which is observed on an apparently matt surface at glancing angles of incidence. (8)

	Luster, gloss, semi-gloss, eggshell, etc. (12)
Sheen uniformity	The even distribution of luster over a dried paint film. (2)
Shelf life	The length of time a coating may normally be stored without losing any chemical/physical properties. Manufacturers typically specify the shelf life. (3) The period of time a coating retains its application and appearance properties if stored according to the manufacturer's recommended conditions. (5) The length of time a paint product may remain on the shelf or stored and still be usable. Affected by storage conditions. (12)
Shellac	A natural resin, usually in the form of thin flakes, that is derived from a resinous substance called lac. Shellac is used to seal and finish floors, seal knots, etc. (2)
Shot blasting	A process of abrasive blast-cleaning using small metal spheres. (10)
Shrinkage	Contraction of a coating film during the drying process. Some shrinkage into the substrate can still occur also a few weeks after curing. (1)
Significant surface area	The part of an article covered or to be covered by the coating and for which the coating is essential for serviceability and/or appearance. (17)
Silicone	A type of resin used in the binder of coatings. Products containing silicone resist dirt, graffiti and bacterial growth. (4)
Silicone release	A coating which contains silicone resins and intended to prevent food from sticking to metal surfaces such as baking pans. (3)
Silicones	Resins consisting of silicon-oxygen linkages, unlike organic resins, which contain carbon. (3)
Silking	A surface defect which results in parallel flow lines in the paint film. (3) The formation of parallel microscopic irregularities left on or in the surface of the dry film of a coating material giving the appearance of watered silk. (9)
Sinkage	The partial absorption of a film of a coating material by the substrate, mainly perceptible as local differences in gloss and/or texture. (9)
Siphon cup (suction cup)	When a special air-spray tip is employed, a partial vacuum is created by the atomizing air just outside the fluid orifice. As a result, atmospheric pressure on the paint in a container connected to the fluid line (such as a siphon cup) will force paint up out of the container into the fluid line leading to the gun tip. The term siphon is actually a misnomer; suction is a more accurate description of the action. (3)
Skin	A tough covering that forms on paint when the container is not tightly sealed. (2) A tough, skin-like covering that forms on paints, varnishes, etc., when left exposed to air for long periods. Formed by oxidation or polymerization. (12)
Skinning	The formation of a surface skin on coating liquids, usually due to the reaction with air or to rapid solvent loss. (3) The formation of a membrane on the top of a liquid caused by the partial curing during storage. (4) The formation of a skin on the surface of a coating material in the can during storage. (9)
Slitting	Cutting wide coils of roll-coated materials into narrower widths. (3)
Slow-drying additive	Chemicals, usually high-boiling solvents, that slow down the film-forming process and promote the coating's flow. (1)
Smoothness	Pleasant touch of a coated surface felt by passing the back of the hand on it. (1)
Softwood	Timber obtained from coniferous species. (1)
Solid color	A degree of opacity (hiding) of an exterior stain. Solid color stains provide the same opacity as that of a paint. (4)
Solids	The solids content of a paint that is left over after the solvent evaporates (same as nonvolatile). (2) The portion of the paint or coating that remains on a surface after the vehicle (liquid

	portion) has evaporated; The dried paint film. Also known as the non-volatile portion. (4)
	The pigment and non-volatile vehicle components of paint that remain on the coated surface. Can be measured by weight and volume. (12)
Solids content	Percentage (by weight) of non volatile matters of the coating which remain in the film after drying. (1)
Solubilizer	Compound that forms polar polymer ions when mixed with water-insoluble resins. Since water is a polar solvent and resins are usually non-polar, the resins must be treated to increase their polarity if they are to be used in waterborne paints. (3)
Soluble	The ability of one product to dissolve into another. (12)
Solution paint	Resin molecules fully dissolved by solvents in the paint. (3)
Solvency	The degree to which a solvent holds a resin or other paint binder in solution. (3)
Solvent	The liquid or blend of liquids used to dissolve or disperse the film-forming particles and which evaporate during drying. A true solvent is a single liquid that can dissolve the coating. Solvent is often used to describe terpenes, hydrocarbons, oxygenated, furans, nitroparaffins, and chlorinated solvents. (3)
	The volatile part of oil-based paints that evaporates during drying. Solvent-based thinners are used for thinning and cleaning up oil-based paints. In latex paints, water performs similar functions. (2)
	The volatile (evaporating) portion of the paint composition; any liquid that can dissolve a resin. (4)
	Liquid which dissolve and keeps in solution the other components of the coating. It reduces the viscosity and helps application and flow. It completely evaporates during the drying stages. (1)
	A single liquid or blends of liquids, volatile under specified drying conditions, and in which the binder is completely soluble. (8)
	That component of a solution which dissolves other components. In paint, the liquid is usually volatile. There are two major categories of paints. One called solvent-based, which refers to oil or resin. The other, water-based, in which water is the solvent. (12)
Solvent popping	Design of experiments can help companies determine which factors will prevent solvent popping defects. Usual factors that impact solvent popping include: convection oven temperature, infrared oven temperature, accelerator per drum, activator type, and convection oven air flow. (3)
Solvent-based	Paints and coatings in which the majority of the liquid content is a solvent other than water. (4)
Solvent-borne	Strictly speaking, organic solvent-borne, this refers to products in which the main solvent carrier is an organic solvent, usually white spirit. (23)
Solvent-borne	Coatings in which volatile organic compounds are the major solvent or dispersant.
Source reduction	Steps taken to reduce waste generation and toxicity at the source through more effective utilization of raw materials and reformulation. (4)
South Florida exposure	Exposure to typical heat, humidity and sunlight conditions at southern latitudes; measurements are generally the change in gloss and/or color (Delta E) (ASTM G 7). (5)
Spackling compound	A material used as a crack filler for preparing surfaces before painting. (2)
Spar varnish	Marine varnish. (2)
	A very durable varnish designed for service on exterior applications. (4)
Spatter	Small particles or drips of paint that occur during the application of paint. (2)
	Small particles or drips of paint thrown when applying paint with a roller cover. (4)
Specific gravity	Weight of a given volume of any substance compared with the weight of an equal volume of water. Relative density. (3)
	The density of a formulation relative to water. (5)

	See DENSITY. (1)
Specification	Written instructions on details of paint applications, types of products to be used, areas to be painted and painting procedure. Quantitative refers to specific ingredient. Qualitative to performance of formula. (12)
Specular gloss	Mirror-like finish, usually 60° on a 60° meter. (4) The ratio of the luminous flux reflected from an object in the specular direction for a specified source and receptor angle to the luminous flux reflected from glass with a reflective index of 1,567 in the specular direction. To define the specular-gloss scale, polished black glass with a reflective index of 1,567 is assigned the value 100 for geometries of 20°, 60° and 85°. (14)
Spot priming	Application of primer to spots that require additional protection because the old paint has been removed. (2) Applying a primer to a localized spot. (4)
Spray booth	Plant in which coating is sprayed. It can be open (if without walls and roof) or closed (if provided only with opening for transit of workpieces). It may have vertical, oblique or horizontal ventilation. Moreover, it could be air-conditioned or pressurised (see also PRESSURISATION). Two different systems of entrapment of the overspray are available: humid (e.g. water screen) or dry (e.g. filters). (1)
Spray guns	Tools used to spray the coating. They can be manual and for individual use or mounted on supports, fixed or program-operated or robotized. The main types available differ for the kind of atomization used (1): - TRADITIONAL AIR: air spray with cup. The coating is atomized by means of air pressure (usually 2-3 atm) and forced through a nozzle (usually 1.5-2.5 mm), coming out in the shape of a fan. This gun usually allows high precision but with a low output of coating. - AIRLESS: achieves coating atomization by forcing it through the nozzle at a very high pressure (sometimes up to 250 atm) by means of a pneumatic pump; no air is added to the atomized coating. A much higher output of coating is achieved than conventional air spray but less precision is allowed. Mainly used for base coats. - AIRMIX: performs between pure airless and conventional air guns. The coating is still forced through the nozzle by means of a pneumatic pump (at a lower pressure than airless), but some air is added to the fan of the outcoming coating, improving the degree of atomization. Compared to a pure airless gun, the output is lower but the precision is higher, and therefore this kind of gun can be used also for top coats. - ELECTROSTATIC: an air, airless or airmix spray gun, where the droplets of coating coming out from the nozzle are given an electrical charge by means of a generator (working at 50-90 kV). Some attraction is therefore established between the coating droplets and the item to be coated. This allows coating of those parts not directly facing the gun, ensuring a more uniform and precise coating and a reduction of wasted product. This is very effective with metal objects (due to their conductivity). It is also used for wood, which has some conductive properties because of its moisture content. Used for coating round shaped parts such as turnings and chairs. - TWO-COMPONENT: used to apply 2-pack coatings with very short pot-life. The spray gun (usually airless) is assisted by two pumps which can collect the product from two different tanks. Therefore the two reacting components can be kept separate and mixed only in the gun. A typical example of this kind of situation is represented by conventional PE coatings (20-60' pot-life). The polyester coating is poured into two different drums; accelerator is then added to one drum and catalyst to the other one. These two separate blends will not start reacting until they are mixed inside the gun itself.
Spraying	A method of application in which the paint is broken up into a fine mist that is directed onto the surface. (2)
Spreading rate	Coverage. (2) The application rate at which a paint can be spread, usually expressed as square feet per gallon. (4) Number of square meters which may be coated with 1 kg of ready-to-used coating. (1) The surface area which can be covered by a given quantity of coating material to give a

	dried film of requisite thickness (e.g. m ² /l or m ² /kg). See also PRACTICAL SPREADING RATE and THEORETICAL SPREADING RATE. (8)
Stability	A processes ability to produce consistent results over time. Stability does not necessarily mean the process makes good products. (3)
Stackability	Drying time necessary for stacking coated items without marking or sticking. (1)
Stain	A solution designed to color a surface without hiding it. Solid color and latex stains are available. Stains may be latex or oil-based. (2) A transparent, semi-transparent or opaque coating applied to porous substrates such as wood, concrete and masonry. (4) Colored solution of dyes (in water or solvent) to be applied onto bare wood to alter its natural color. (1)
Static electricity (electrostatics)	Electrons temporarily removed from various items can cause static charges. Whatever has excess electrons has a negative charge; the object from which electrons have been taken will be positively charged. Electrons will tend to jump from one object to another if at all possible in order to neutralize all charges. This behaviour differs from electrical current, or electrodynamics; instead, electrostatics and charges are termed static electricity. (3)
Steam cleaning	The removal of surface contaminants from metallic components by the action of steam jets. (10)
Stencil coating	Ink or other coating that is rolled or brushed onto a template or stamp in order to add identifying letters and/or numbers to metal parts and products. (3)
Stippling	A finish made by using a stippling brush or roller stippler on a newly painted surface before the paint is dry. (2)
Stopper	A stiff paste used for filling holes, cracks and similar surface defects. (8)
Stoving	The hardening process by which the crosslinking (increase in molecular size) of a binder results from the application of the heat at a predetermined minimum temperature. For stoving generally a temperature range and time period are prescribed whereby the temperature limits are specific for the material. (8)
Stratification	Lack of adhesion between different coats. It occurs when several coats of the same coating have been applied later than the suggested maximum recoating time, thus affecting adhesion between coats. (1)
Streaking	The irregular occurrence of lines or streaks of various lengths and colors in an applied film. Streaking is usually caused by some form of contamination. (2)
Strength	The ability of a coating film to resist bending and stretching. (3)
Stretchability	See ELASTICITY. (12)
Strip	To remove old finishes with paint remover. (2)
Stucco	A masonry finish that is usually applied to the exterior surfaces of buildings in place of siding or other materials. (2)
Substrate	The surface that is being painted. (2) Any surface on which a coating is applied. (1) (4) The surface to which the coating material is applied or is to be applied. (8) A layer lying under another. A material on the surface of which a coating is applied. ie wood, cold rolled steel, galvanized steel, etc. (12)
Surface hardness	Resistance exhibited by a coating towards mechanical stresses (scratches, impacts, friction, pressures, etc.). (1)
Surface preparation	The conditioning of a surface to receive a coating. For instance, surface must be free from dirt, grease, dust and properly sanded, etc. (12)
Surface profile	Describes the condition of surface that is to painted. Paint films adhere to “microscopically rough“ surfaces better than that of smooth surfaces. (4)
Surface tension	The energy required to expand the surface of liquid by unit area. Liquids tend to reduce their surface area due to unequal intermolecular attractive forces in this region. A low

	degree of surface tension is preferred for liquid coatings to maximize adhesion and minimize edge-pull and fish-eye effects. (3)
	A property of liquid or solid matter due to unbalanced molecular forces near the surface. A measurement of this property. (12)
Surfacer	Easily sanded coating used to fill surface irregularities. (3)
Surfactant	An additive that promotes surface wetting. (4)
Sweating	The emergence, on the surface of a film, of one or more of the liquid constituents of the coating material. (9)
Swelling	The increase in the volume of the film as a result of the absorption of liquid or vapour. (9)
Synthetic brush	A paint brush with filaments that are made from a non-absorbent plastic material such as polyester or nylon, rather than animal hair. Synthetic brushes are usually used for latex paint. (2)
T aber abrasion	Resistance to wear (ASTM D 4060). (5)
Tack rag	A loosely woven woollen cloth that is treated (dipped into a varnish oil and wrung out) to remain tacky. It picks up dust when it is used to wipe a surface. (2) A piece of cloth impregnated with a sticky substance that is used to remove dust from a substrate after abrading and prior to further painting. (10)
Tackiness	Slight stickiness of the surface of an incompletely dried film when pressed with the finger. (2)
Tacky	The sticky condition of coating during drying at a stage between the wet and dry-to-touch stages. (2) The sticky condition of a paint or coating during drying, between the wet and dry-to-touch stage. (4) That sticky condition that exists in the drying process. Between wet and dry stages. (12)
Tannin	Soluble natural stain in woods such as cedar. (3)
Tannin blocking	The process of making tannin stains insoluble so they cannot stain the topcoat; e.g., by means of a primer before the topcoat on cedar siding. (2)
Tape adhesion	A paint test that measures the adhesion of the film to the substrate by “jerking” paint away with a strip of tape. (3)
Telegraphing	Brushmarks or other irregularities in the previous coat or substrate that show through the dried topcoat. (3) A hand print, rag mark, or hose mark, etc., on one coat that reads through on a subsequent coat. (12)
Temperature stability	Appearance and adhesion after a period of time at a prescribed temperature and film build. (5)
Tensile strength	The load necessary to break a film when pulled in the direction of length. The stress necessary to break. (12)
Terpene solvents	Terpene solvents are VOCs obtained from pine tress and are the oldest solvents used in coatings. Includes turpentine, dipentene, and pine oil. (3)
Test area	Area on which test is carried out. (6)
Test atmosphere	Atmosphere where the test is carried out. (6)
Test panel	Panel produced in the same way as the test surface; it shall be used when it is not possible to carry out the test directly on the test surface. (6)
Test surface	Part of the test unit, where the test area is included. (6)
Test unit	Finished item of furniture. (6)

Texture	The roughness or irregularity of a surface. (2) The structural quality of a surface. (3)
TGIC	Please see Triglycidyl isocyanurate. (3)
Theoretical spreading rate	A spreading rate calculated solely from the volume of the non-volatile matter. (8)
Thermally-inverse solubility	Nearly all solids follow the pattern of becoming more water-soluble as temperature increases. A relatively few exceptions decrease in solubility with a rise in temperature. (3)
Thermoplastic	Resin capable of being repeatedly softened by heat and hardened by cooling. These materials, when heated, undergo a substantially physical rather than chemical change. Thermoplastic resins can be completely dissolved with appropriate solvents. (3) A coating powder which will repeatedly melt when subjected to heat and solidify when cooled. (5) Soft and pliable when heated, returning to solid when cooled. (12)
Thermoset	Resin that, when cured by application of heat or chemical means, changes into a substantially infusible and insoluble material. Thermosetting resins will soften but will not dissolve in any solvents. (3) A coating powder which, when subjected to heat, undergoes an irreversible chemical reaction during the cure cycle. (5)
Thermoset transfer efficiency	The amount of powder attracted to the part compared to the amount of powder sprayed; measured as a percentage. (5)
Thermosetting	Type of plastic that becomes hard and unmoldable when heated and thereafter is heat resistant. (12)
Thickener	A substance added to a liquid to increase its viscosity. (2)
Thickening	The increase in the consistency of a coating material but not to extent as to render it unsuitable. (9)
Thinner	Volatile liquid used to adjust consistency or to modify other properties of paint, varnish and lacquer. Thinner is used to thin and clean up paint. (2) Solvent blend to be added to stains or coatings in order to decrease viscosity, in accordance with application requirements. Each type of coating needs specific thinners (e.g. polyurethane coatings require alcohol-free thinners containing less than 0.05% water). Within each type thinners can be characterized by solvency (that is the ability to decrease viscosity of the coating) and speed of evaporation. The choice of the proper thinner, according to the type of coating and application method, is very important in order to obtain a perfect result without defects. (1) A single liquid or blend of liquids, volatile under specified drying conditions, added to a coating material to influence properties, primarily the viscosity. See also DILUENT and SOLVENT. (8) A volatile liquid with which the viscosity of a paint product can be modified. The thinner evaporates when the coating is drying. (12)
Thinners	Solvents used to thin, reduce or clean-up wet paints and coatings. (4)
Thinning	The process of adding volatile liquid to a coating to reduce its viscosity. This liquid may be solvent, diluent, or mixtures of both. Also may be called reducing or »adding make-up solvent«. (3)
Thinning ratio	Quantity of thinner (expressed in parts by weight or volume) to be added to 100 parts of a coating in order to bring it to the desired application viscosity. (1)
Thixotrope	Substances that cause temporarily high paint viscosities by forming loosely-held, three-dimensional particle networks within paint fluids. Agitation of the paint by stirring, pumping, spraying, etc., quickly destroys the networks and viscosity drops sharply. When agitation is halted, the networks reform rapidly and paint viscosity again rises. (3)
Thixotropic	Describes full-bodied materials that will “thin out” when agitated, shaken, stirred, brushed

	or rolled. (4)
Thixotropy	<p>The property of a material that causes it to change from a thick, pasty consistency to a fluid consistency upon agitation, brushing or rolling. (2)</p> <p>The tendency for the viscosity of a liquid to be shear-rate dependent. When a liquid is rapidly shaken, brushed, or otherwise mechanically disturbed the viscosity decreases rapidly. (3)</p> <p>Ability of a coating to be applied on vertical items without runnings. (1)</p> <p>The property exhibited by certain paints to gel in the container. A return to the liquid state occurs when shaken and stirred. (12)</p>
Threshold limit value (TLV)	The maximum airborne concentration of a compound to which a person can be exposed to on a daily 8-hour basis. (3)
Throwing power	<p>The ability of electro-deposited coatings to cover interior surfaces. (3)</p> <p>The ability of an electrodeposit to penetrate into "hard to reach" areas, such as a hollow metal object. (12)</p>
Tint	To add color. (12)
Tint base	In a custom color system, the basic paint to which colorants are added; i.e., white or accent base. (2)
Tinting	The final adjusting of a color of paint to the exact shade required. Tinting is achieved by adding small portions of colorant to a tint base of prepared paint. (2)
Tinting strength	The coloring power of paint or pigment. (12)
Titanium dioxide	White pigment in virtually all white paints and coatings. Provides excellent hiding power. (4)
Toluol	A relatively inexpensive solvent used in industrial finishes. (Aromatic) (12)
Tooth	<p>The profile or anchor pattern of a substrate or paint film. (4)</p> <p>Roughening of a surface with sandpaper or cleaning with a liquid degreaser in preparing a surface for painting. A condition of a surface which helps adhesion of succeeding coats of paint. (12)</p>
Top coat	The final coat of a coating system. (7) (8)
Topcoat	<p>A coat designed to provide a "finish" capable of providing protection and color (previous coats are referred to as primers and undercoats.). (2)</p> <p>Final coat applied onto the item. It can be clear or pigmented, matt or high gloss. Top coats are usually applied as one coat. High gloss top coats can be applied in two light coats instead of a thick one if they are to be buffed or polished. (1)</p> <p>The final coating film or multiple layers of the same coating film applied to the surface. (3)</p>
Touch dry	Drying stage when the coating film can be touched lightly without a sensation of stickiness, or without leaving a finger print. (1)
Touch-up	<p>Improving imperfect spots in a paint job. (2)</p> <p>The portion of the coating that is incidental to the main coating process but is necessary to cover minor imperfections. (3)</p> <p>The ability of a paint or coating to be spotrepaired without showing color or gloss differences. (4)</p>
Toughness	The quality of a hard film to resist scratches, abrasion and breaking. (12)
Toxic air contaminants	Those air pollutants that may cause or contribute to an increase in deaths or serious illness, or which may pose a present or future hazard to human health, as listed by the California Air Resources Board. (3)
Transfer efficiency	The ratio of solids adhering to an object to the total amount of coating solids used in the application process, expressed as a percentage. Nonadhering paint, or overspray, goes onto booth surfaces, hooks, filters, etc. (3)
Translucent	Allowing light to pass through partially. In terms of a coating, a translucent or semi-

	transparent coating is one through which the underlying substrate remains partially visible. (23)
Translucent coating	Coating containing a small amount of pigments or dyes which alter the colour of the substrate onto which it is applied, without completely hiding it (the pattern of the structure underneath can still be clearly seen). (1)
Transparency	Ability of a coating not to hide the aspect of the substrate. (1)
Triboelectric spray method	Powder particles receive an electric charge through the use of frictional contact with a nonconductive material. (5)
Triglycidyl isocyanurate	A low molecular weight epoxy functional crosslinker used in polyester powder coatings. The crosslinker enables polyester TGIC formulations to contain 90 percent or greater resin within the binder system. (3)
TSP	Tri-sodium phosphate, a cleaning agent. After the TSP has been dissolved in water, the solution is used in surface preparation (after cleaning with TSP, the surface should be rinsed.). (2)
TSP substitute	A biodegradable cleaning agent that can be used instead of TSP. (2)
Turnover	When the paint solids in the batch or dip tank are completely replaced or replenished by an equivalent amount of solids materials, the bath has "turned over" one time. (12)
Turpentine	A paint thinner (now replaced by mineral spirits) obtained by distilling pine tree secretions. (2)
Two-component spray gun	See SPRAY GUNS. (1)
Ultrafiltration	Ultrafiltration uses low-pressure membrane filtration to separate small molecules from large molecules and fine particulates. For example, E-coat rinse water is extracted from the paint bath by ultrafiltration. (3)
Ultrafiltrate	The output of ultrafiltration; also called permeate. (3)
Ultrasonic cleaning	Vibrational frequencies slightly higher than those audible; used to agitate immersion cleaning tanks. Microbubble formation in the liquid accelerates dislodgement of soils. (3)
Ultraviolet radiation (UV)	Light energy from the UV region of the light spectrum which can break certain chemical bonds and contribute to the fading and wear of coatings. (5)
Underbake or undercure	Exposure of the coating to a temperature lower, or for a shorter period of time, or both, than recommended for optimal curing; the condition may cause tackiness, softness, and inferior film durability. (3)
Undercoat	For unpainted surfaces, the coat between the primer and the topcoat. For previously coated surfaces, the undercoat is applied directly to the old paint. (2) A primer or intermediate coat of paint. (4) See BASECOAT. (1) See INTERMEDIATE COAT. (7) (8) A primer over which a topcoat will be applied. (12)
Undercoaters	Coatings formulated and applied to substrates to provide a smooth surface for subsequent coats. (3)
Urethane	A product resulting in a tough, chemical-resistant finish. Urethane requires mineral spirits for thinning and cleaning up. See also POLYURETHANE (2) See POLYURETHANES. (4) A polymer which contains urethane linkages. Urethanes are noted for their toughness and abrasion resistance. (12)
Urethanes	Materials based on resins made by the condensation of organic isocyanates with compounds or resins containing hydroxyl groups. Categories of polyurethane coatings include: single component prereacted-urethane coatings; single component moisture-cured urethane coatings; single component heat-cured urethane coatings; two-component catalyst-urethane coatings, two-component polyurethane coatings; and one-component

	nonreactive lacquer-urethane solution coatings. (3)
UV absorber	Chemicals, usually added to topcoats, that block the ultra-violet rays of the solar spectrum before they reach the substrate. Addition of UV absorbers provides enhanced wood protection and longer service life of the coating film on outdoor exposure. (1)
UV coatings	See COATINGS. (1)
UV curing	The hardening of coating materials by exposure to ultra-violet radiation. (10)
UV lamps	Lamps emitting ultraviolet radiation used to cure coatings based on unsaturated resins (polyesters, acrylics). (1)
UV light	The invisible rays of the spectrum lying outside the violet end of the visible spectrum. Responsible for much film failure in exterior exposure. (12)
V vacuum metallizing	Process in which surfaces are thinly coated by exposing them to metal vapour under vacuum. (3)
Varnish	A liquid composition that dries to form a transparent or translucent finish. (2) Clear or pigmented coatings formulated with various resins and designed to dry by chemical reaction on exposure to air. These coatings are intended to provide a durable transparent or translucent solid protective film. (3) A transparent version of paint usually applied to wood substrates. (4) See COATINGS. (1) A clear coating material drying exclusively by oxidation. See also CLEAR COATING MATERIAL. (7)
Varnish stain	Varnish that is colored with a dye. It does not have the same power of penetration as a true stain, and it leaves a colored coating on the surface. (2)
Vehicle	The liquid portion of a coating in which the pigment is dispersed; it is composed of binder, solvent and diluent. (3) The liquid portion of a paint. The vehicle is composed mainly of solvents, resins and oils. (2) The liquid portion of a paint or coating. Vehicles are mainly composed of solvents, resins and oils. (4) See MEDIUM. (8) A liquid, as oil, which is mixed with pigment to make paint. (12)
Velvet	A gloss range between flat and eggshell. (2)
Vendor rating system	A ranking of vendors that usually includes a measurement of delivered quality, price, responsiveness, and compliance. (3)
Vertical hold	See THIXOTROPY. (1)
Vinyl	A resin with poor adhesion but good hardness, flexibility and resistance. Vinyl is used in plastics, wallcoverings, wood adhesives, swimming pools, tank linings and marine equipment. (2)
Vinyl chloride polymers	Polymers comprised by the polymerization of vinyl chloride or copolymerization of vinyl chloride with other unsaturated compounds, the vinyl chloride being in greatest amount by weight. Can be used in thermoplastic powder coatings. (3)
Vinyl resins	Resins which involve the unsaturated vinyl group ($\text{CH}_2=\text{CH}-$), including polyvinyl acetate, polyvinyl chloride, copolymers of these, the acrylic and methacrylic resins, the polystyrene resins, etc. (3)
Virgin material	Powder which has not been mixed with reclaim material. (5)
Viscosity	The fluid thickness of a product. Viscosity is often referred to as consistency. The higher the viscosity, the thicker the fluid. (2) The property of a fluid whereby it tends to resist relative motion within itself. A thick liquid such as syrup has a high viscosity. Viscosity is often measured using an efflux-type cup, which gives the time required for a given quantity of paint to flow through a hole in

the bottom of the metal cup at a given temperature (See Zahn Cup). (3)

The thickness or fluidity of a paint or coating relating to its ability to flow as a liquid. (4)

Fluidity degree of a coating which can be modified by adding solvents. It can be regarded as the resistance to flow, due to the internal friction of the movement of molecules against each other. It is particularly important for coating workability according to application technique used: it is usually low for spraying, medium for curtain coating and high for roller coating. It is commonly measured by viscometers like DIN cup which consists in a cylindrical container of 100 cc with a conic bottom provided with a bore of 2, 4 or 8 mm diameter. For example, if the diameter is 4 mm, the cup is called DIN 4. The cup is filled with coating and its discharge time expressed in seconds is the measure of viscosity. As viscosity is affected by temperature, viscosity values of technical reports are referred to a standard temperature of 20 °C. (1)

The thickness or thinness of a liquid. A measure of resistance to flow. (12)

VOC	Volatile Organic Compound. Definition - Any organic compound with a boiling point (or initial boiling point) lower than or equal to 250°C, at normal conditions of pressure, which participates in atmospheric photochemical reactions. (23)
Volatile	Any material that passes off in the form of a vapor. (12)
Volatile matter	The portion of a coating that evaporates after application. (2)
Volatile organic compound (VOC)	Organic chemicals and petrochemicals that emit vapors while evaporating. The VOC content is listed as pounds per gallon and grams per liter. VOC limits are regulated by the EPA. (4) Carbon compounds which can undergo an atmospheric photochemical reaction, contributing to air pollution and causing ozone depletion. (5) Fundamentally, any organic liquid and/or solid that evaporates spontaneously at the prevailing temperature and pressure of the atmosphere with which it is in contact. See also VOLATILE ORGANIC COMPOUND CONTENT. (8)
Volatile organic compound content (VOC content, VOCC)	Mass of the volatile organic compounds present in a coating material, as determined under specified conditions. The properties and the amount of compounds to be taken into account will depend on the sphere of application of the coating material. For each sphere of application, the limit values and the methods of determination or calculation are stipulated by regulations or by agreements.
Volatile thinner	Liquid which evaporates during the drying of the film. (12)
Volatility	The tendency of a liquid to evaporate. Liquids with high boiling points have low volatility and vice versa. (3)
Voltage	A measure of the potential difference (force or pressure) in electrical systems. (3)
Volume solids	The percentage of a unit of paint that remains on the surface after the solvent has evaporated. (4)
Wash coat	Coating with a low solids content, usually applied by dipping directly on bare wood even before staining process, in order to help sealing very deep pores and to promote pore staining. Usually based on one-pack systems. (1)
Washability	The ability of a paint to be easily cleaned without wearing away. (2) The ability of a paint or coating film to withstand washing and cleaning with water, soap, detergent and other mild, non-abrasive household cleaning agents. (4) The ease with which dust, soiling and surface stains can be removed by washing from a dry film of a coating material without detriment to its specific properties. (8)
Water absorption	The ability of a coated surface area to absorb water from liquid or vapour. (7)
Water blasting	Using equipment that applies water under high pressure to clean a surface. Commonly used to prepare exterior surfaces for repainting. (4)
Water permeability	The ability of a coating system to allow the transmission of water as liquid or vapour. (7)
Water resistance	A coating's ability to withstand immersion in water at prescribed temperatures for

	specified time periods (ASTM D 870). (5)
Water spotting	Defective appearance of the paint surface that is caused by water droplets. (2)
Water vapour permeance - WVP	The steady water-vapour flow in unit time through unit area of a body (WVT) induced by unit vapour pressure difference (Δp) between the two surfaces of a coating. Therefore, $WVP = WVT/\Delta p$. Accepted inch-pound unit is grains per square foot per hour per inch of mercury (called a perm). Accepted SI unit is grams per square metre per 24 h per millimetre of mercury (called a metric perm). (21)
Water vapour transmission rate - WVT	The steady water vapour flow in unit time through unit area of a body, between two specific parallel surfaces, under specific conditions of temperature and humidity at each surface. Accepted inch-pound unit is grains per square foot per hour. Accepted SI unit is grams per square metre per 24 h. (21)
Water-based paint	Latex paint. (2)
Water-borne	Product in which the main solvent carrier is water. (23)
Waterborne coatings	Coatings in which water is the major solvent or dispersant. Solvents or dispersants include water-soluble polymers (water reducible), water-soluble colloidal dispersions, and emulsions (including latex). (3) See COATINGS. (1)
Water-reducible coatings	See waterborne coatings. (3)
Water-vapour transmission rate (of a coating)	The mass of the water vapour that is transmitted over a given period through a test piece of a given surface area under specified constant conditions of relative humidity at each face of the test piece. Water-vapour transmission rate is expressed in grams per square metre per day ($\text{g}/\text{m}^2\cdot\text{d}$) at the conditions of relative humidity defined at the two faces of the coating. (15)
Weatherability	Degradation caused by humidity, temperature, and exposure to sunlight. (5)
Weathering	Paint film deterioration as a result of exposure to the weather. (2) Aging of a coated wooden item (e.g. window frames, shutters, etc.) on exposure to the atmosphere. (1)
Weathering resistance	Resistance exhibited by the coating film towards degradation caused by weather (sun, rain, etc.). (1)
Weatherometer	An electrical testing instrument that accelerates various weather conditions on panels exposed to ultraviolet light and water spray. (12)
Weir	The (often adjustable) barrier that controls the paint depth in an E-coat tank and over which the paint flows to the circulation pump and is filtered. (3)
Wet edge	The length of time during which a paint can be brushed before it becomes too dry to flow out and blend together. (2) The fluid boundary at the edge of wet paint and the dry substrate. Applicators maintain a wet edge to aid in providing a smooth, uniform finish, especially on large, smooth surfaces. (4)
Wet film thickness	The thickness of a wet coat of paint. (4) The measurement of the coating when applied, but before the evaporation of the solvent. (12) The thickness of a freshly applied coating material, measured immediately after application. (17)
Wet mil gauge	A tool used to measure the thickness of a wet film of paint. (4)
Wet-on-wet application	A technique whereby a further coat is applied before the previous one has dried, and the composite film then dries as a single entity. (10)
Wet-on-wet finishing	Applying a new coat over an earlier applied coat that has been allowed to flash-off but not to cure. (3)
Wetting agent	An aid to dispersion by addition of substances to lower the surface tension of water. (12)

White pores	Defect of a coating (nearly always due to detachment of the film from the substrate) causing grey-silver spots between the wood and the coating, which can be better seen in the depth of pores. (1)
Whitening in the grain	White or silvery areas, mainly in deep-grained wood, which appears as the formation of the clear film progresses. (9)
Wood filler	Product containing a great deal of extenders which is used for fill unevenness of the surface or deep pores. (1)
Wood humidity	Humidity content of the wooden item, which should be within the range of 8 to 14% max. to give a perfect coating. (1)
Wood preservative	A product, containing a biocide, which is intended to inhibit the development of wood-destroying and/or wood-staining organisms in the wood to which it is applied. (7)
Wrap	A characteristic of coating powders during electrostatic application to seek out and adhere to areas of the substrate not in the direct line of sight of the delivery system end point. (5)
Wrap around	Electrostatic effect where charged coating particles curve around the part and are deposited onto the rear side of the part. (3)
Wrinkling	Distortion in a paint film appearing as ripples. (2) Defect of a coating occurring when a film dries on the surface more quickly than below the surface. (1) Ridges and furrows that develop in a paint film when the paint dries. (3) The development of rivels in the film of a coating material during drying. (9) A term used to describe the surface finish of a dried paint film having the appearance of a wrinkled and aged skin. This is the result of excessive thickness of coating so that the surface dries, forming a skin, while the coating remains wet beneath. (23)
Xylol - xylene	A solvent used in industrial finishes which has a higher boiling point than toluol. Otherwise, similar to that liquid. (Aromatic). (12)
Yellowing	Development of a yellow color or cast of a coating due to aging or cure variables; more evident in light colored formulations. (5)
Zahn cup	Commonly used efflux cup used for measuring the viscosity of coatings. Other widely used viscosity cups are the Fischer cup and the Ford cup. These instruments measure the time required for a given quantity of paint to flow through a hole in the bottom of the metal cup at a given temperature. Different drain hole diameters and cup sizes are available, depending on the viscosity of the coating. (3)
Zinc dust	A medium gray pigment with extreme hiding power. Zinc-rich paints adhere unusually well to galvanized metal. Other desirable qualities are one-coat hiding, weather and heat resistance and it inhibits rust. (12)

VIRI

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