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Standard Terminology Relating to Electrostatic Imaging[1]

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1. Scope

1.1 This set of definitions is intended for use by all parties who use, sell, manufacture, test, or develop printer or copier machines so that they will have a common basis for communications.

2. Referenced Documents

2.1 *ASTM Standards:*[2]

F149 Terminology Relating to Optical Character Recognition

F221 Terminology Relating to Carbon Paper and Inked Ribbon Products and Images Made Therefrom

F1156 Terminology Relating to Product Counterfeit Protection Systems (Withdrawn 2001)[3]

F1531 Test Method for Comparing Printer or Copier Cartridges (Withdrawn 2002)[3]

3. Terminology

3.1 *Definitions:*

aerosol development—development in which the toner is carried to the field of the electrostatic image by means of a suspending gas.

all-in-one cartridge—(also known as cartridge), a process unit that incorporates all the components, including a photoreceptor, toner compartment and charging devices, used in certain electrostatic imaging devices.

apparent surface resistivity—the surface resistance between two electrodes forming opposite sides of a square on the surface of the copy substrate or the electrical equivalent.

archival quality—the properties of a copy or print necessary to retain specified information under specified conditions of storage, time and use.

background potential—applies only to charged area development process, see **charged area development**. See **residual potential**.

background potential—see **residual potential.**

base stock—see **conductive base stock.**

base weight—the weight of a specified area of paper stock expressed in grams per square metre or in pounds per ream, where the size and number of sheets per ream may vary for each particular grade of paper. Common ream sizes used in electrostatic papers are:

25 by 38 in. by 500 sheets (3300 ft^2)
24 by 36 in. by 500 sheets (3000 ft^2)
17 by 22 in. by 500 sheets (1300 ft^2)

binder—the resinous adhesive component of a pigmented coating composition.

black density—see **image density.**

blasting—haze around a letter, word or image in the form of fine spotting or speckling.

blocking—the tendency for coated sheets to stick together under pressure.

bridging—combination of peaks and smudges that may close or partially close the loop of a character (Terminology F149).

caliper—the thickness of a sheet expressed in millimetres or in thousandths of an inch.

carrier—that substance in a developer that conveys a toner, but does not itself become a part of the image in the finished print. In a liquid developer the carrier may be called a dispersant.

cascade development—development in which dry toner and carrier are drawn over an electrostatic image by gravity.

catcher blade—(also known as a recovery blade or slip sheet), a strip of semi-rigid plastic material that guides the waste toner removed from the photoreceptor into the waste bin.

charge acceptance—the apparent surface voltage present on an electrostatic recording medium immediately after charging.

[1] This terminology is under the jurisdiction of ASTM Committee F05 on Business Imaging Products and is the direct responsibility of Subcommittee F05.01 on Nomenclature and Definitions.

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

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

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charged area development—(CAD), a process in electrostatic copying where the photoconductive element is charged with a charge of the opposite sign as that of the toner. A light source is used to discharge all areas on the photoconductor that are NOT to receive toner to form the image. The toner is attracted to the non-discharged areas of the photoconductor when the latent electrostatic image is developed.

charging—the process of establishing an electrostatic surface charge of uniform density on an insulating medium.

cleaned component—the result of substantially removing toner, dust and other undesirable materials, either by mechanical an/or chemical means.

cleaner blade—(also known as wiper blade), a blade which cleans the surface of the photoreceptor to mechanically remove toner and debris.

cloud development—see **aerosol development.**

coated paper—paper which has one or both surfaces covered with a substance to produce certain desired properties for use in specific electrophotographic processes.

coated paper copying—a form of direct electrophotographic copying.

coating weight—the wet or dry weight of coating material applied to a paper or other substrate expressed as grams per square metre or pounds per specified ream.

compatible cartridge—any all-in-one cartridge that can be used in a particular printer or copier, whether new, recycled or remanufactured.

conductive base stock—paper stock intended as a substrate for electrostatic coating with surface or volume conductivity over a range of relative humidities controlled by special treatment.

copying—the act of producing an image on a document or other receptor media which is a duplication of the image of another document, such as by a photographic, xerographic, or facsimile process or by carbon or carbonless papers.

corona—gaseous ions, either positively or negatively charged. Usually produced at atmospheric pressure using a high voltage source and either one or more pointed conductors or a thin long conductor (that is, corona wire).

corona charging—depositing of an electrical charge on a surface by means of corona.

corona wire—a long, thin wire suspended in air and electrically isolated that when connected to a high voltage source will produce corona.

dark adaptation—conditioning of photoelectrostatic copying papers in the absence of light to permit the recovery of photoconductive properties.

dark decay—loss of apparent surface voltage in the absence of light.

dark decay rate—the rate of loss of apparent surface voltage per unit time in the absence of light.

density—see **image density.**

depletion—decrease of toner concentration in a developer composition characterized by low-image density.

developer—the material or combination of materials that renders visible a latent electrostatic image when brought into intimate contact with it. Electrostatic developers can be either liquid or dry and can consist of a toner and a carrier.

developer roller—(also magnetic roller or mag roller), a cylinder built into the copier toner cartridge or printer toner cartridge intended to present correctly charged toner from the toner reservoir to the charged areas of the photoreceptor.

development—the process of converting a latent electrostatic image into a visible image.

direct development—see **positive development.**

direct electrophotographic copying process—an electrophotographic copying process in which the photoconductor is an integral part of the final copy.

discharged area development (DAD)—a process in electrostatic copying where the photoconductive element is charged with a charge of the same sign as that of the toner. A light source is used to discharge only those areas that are to receive toner to form the image. In the development process, the charged background areas repel the like charged toner to the discharged areas on the photoconductor.

dispersant—the material, usually an organic solvent, in a liquid developer system that conveys toner particles, but does not itself become a part of the image in a finished print. (See also **carrier.**)

doctor blade—(also known as a charging blade), a component that imparts an electrical charge to toner by means of the triboelectric effect and/or controls the amount of toner delivered to the developer roller.

doping—the addition of foreign species into a photoconductive material to modify its semiconductor properties such as light sensitivity, response times, and dark conductivity.

dragging—a fringe effect attached to the trailing edge of the developed electrostatic image. (See also **tailing.**)

dry carrier toner—dry powdered toner mixed with bead or granular particles as a carrier to form a developer.

dry time—the time that a copy must reside in the copy tray before it appears to be dry.

duplex copy—a sheet with copied images on both sides.

duplexing—*in a copy system*, the process by which images are placed on both sides of the copy sheet.

dusting—the developer/toner particles deposited in and around the machine on other than the electrostatic copy.

dye sensitizing—the incorporation of dye-stuffs into a photoconductive coating to alter its spectral response.

edge effect—an image defect characterized by a low density or poor fill-in of solid areas coupled with a higher density outline.

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