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Printing Fundamentals Edited by Alex Glassman

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A primer for printing as it relates to paper, particularly vital to a papermaker or printer's communication with his customers. Contents include principles of contact printing; principles of noncontact printing; groundwood paper grades; coated grades and commercial printing; book publishing paper; business and writing papers; paperboard; performance characteristics of paper; testing paper and board for printing; and future trends.

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Calcium carbonate; paper coating, use in Calendering; business forms, ink holdout, influence on, paper coating and, supercalendered newsprint, trade-offs Cameron Belt Press Carbon paper tissue Carbonless paper Cartons Cast-coating process Catalogs; binding, coated paper properties, printing, trends Chapman smoothness tester Checks; character recognition, paper requirements Clark tester Clav Coated papers; lightweight coated papers, binders, types of, book weights, box wrap, carbonless paper, cast-coated, classifications, coating materials, coating methods, cover weights, defined, dull-coated, electrophotographic printing, glossy-coated, gravure, used in, groundwood papers, history of, label papers, letterpress, used in, lightweight, map papers, matte-coated, office copying, use in, packaging papers, paper-ink interaction, paperboard, printing on, pigments used in coating, printability, safety papers, sheet-fed litho, use in, thermal printing, trends, web printing, use in Coating Color; book publishing, trends in, correction, gravure printing, newspaper printing, packaging printing, perception, publication printing, trends in, reproduction, separation,

spectacolor, variation during printing Color printing; forecast Color strength; testing Commercial papers Commercial printing; trends Computers; character recognition, continuous forms, dot-matrix printing, electrophotographic printing, impactless printing, influence on, information storage and retrieval, ink-jet printing, magnetic storage of information, variable printing Computersetting; history of Contact printing; lithography, gravure printing, binding and finishing, color reproduction, commercial printing, defined, halftone photography, image assembly, imposition, job procedure, line photography, methods, platemaking, prepress operations, press operations, process photography, screen printing, specialty printing, trends, typesetting Converting; binding and finishing, book papers, glossary, packaging papers, use of, paperboard roll stock Copier papers; paper requirements Copiers; plain paper Corrugated board; printing on Cylinder board Cylinder forming machines Dancer roll Dielectric printing; trends DiLitho printing; comparison of various systems, newspaper printing, origins, paper requirements, plates, potential problems Directories; paper requirements, printing and binding Disposables Dot-matrix printing; implactless printing, thermal printing, variable printing, lasers, legibility Driography; plates Drying; paper webs Dummy Duplicating papers Dusting tests Electrophotographic printing; variable printing,

Electrophotographic printing; Variable printing, coated papers, computer printing with lasers, dielectric printing, zinc-oxide systems, duplicators, plain-paper copying, lasers, paper requirements, plates, technological developments, trends Electro-thermosensitive printing Elmendorf Tear Test Exported paper; trends

Facsimile transmission Filters; color reproduction Fine papers Finishing Flat-bed cylinder press Flexography; newspaper printing, packaging printing, printing on corrugated board, print tests, trends Fluorochemical-treated paper; packaging paper Formation; fourdrinier vs. twin-wire Forming machines; paperboard Fourdrinier; evolution

G.R.I. Printability Tester

Glassine paper

Gravure printing; applications, book papers, catalogs, coated paper properties, coated paperboard, color in, cylinder etching, cylinder making, cylinders, relative cost of, defective webs, groundwood papers, ink-drying tests, missing dots, newsprint, packaging printing, paper requirements, paper smoothness, paperboard, paperboard moisture content, platemaking, predicting printability, print gloss, print smoothness, printing on corrugated liner, printing tests, pros and cons, roll defects, run lengths, sheet fed, speed compared with dotmatrix, stamp papers, test development, tests, tests on solid print, tone density, tone quality, trends, types of runs, web fed, wraparound plates, potential use

Greaseproof papers; map papers, packaging papers

Greeting cards

Groundwood papers; newsprint, catalogs, clay coated, comparison of various grades, defined, directories, gravure printing, ink showthrough, lightweight coated, lithography, newsprint, office papers, paperback books, publication papers, specialty grades, supercalendered newsprint, trends, types of Gusseting

Halftones dots; ink receptivity and, gravure printing, newsprint printing, perceptual threshold

Halftone photography; print quality for different papers, screens, tone reproduction Halftone photography; print quality for different papers, screens, tone reproduction Halftone screens; moire patterns Halftones; book papers, electrophotographic printing, gravure printing, used in, label papers, letterpress printing, used in, lithography, used in, map papers, use in, newspaper printing, use in, process color

Image assembly

Impactless printing; electrophotographic printing, ink-jet printing, lasers, printing with: thermal printing, variable printing, xeroprinting,

comparison of methods, computers, influence of, defined, dielectric printing, dot-matrix printing, electrophotographic printing, electrosensitive printing, ink-jet printing, magnetic printing, plain-paper copying, printing speeds, recording energy, thermal printing, trends, various processes described, xeroprinting Imported paper Imposition Impression printing Ink; coated paper, interaction with, driography, used in, drying tests, emulsification, flexography, used in, gloss, gravure, used in, gravure printing of paperboard, heat-set, highgloss, invisible, label papers, letterpress, used in, lithography, used in, magnetic, paper requirements, paperboard lithography, quickset, related to paper surface properties, rough papers, safety papers, showthrough, transfer in letterpress printing, trapping, ultraviolet

Ink holdout; calendering, effect of, gloss variations, letterpress printing, print gloss, as a measure of, printing tests

Ink receptivity; ink trapping, effect on, letterpress printing

Ink showthrough; groundwood paper, measuring of

Ink transfer; letterpress printing, paperboard printing

Ink trapping; moire patterns, ink absorption Ink wip tests

Ink-jet printing; variable printing, applications, image versatility, speed capability, trends Inserts

Intaglio printing; postage stamps

K and N ink test

Label papers, printing on

Lasers; impactless printing, variable printing, defined, platemaking, printing, trimming copier paper

Ledger papers

Letterpress printing; book papers, coated paper, coated paper properties, commercial printing, compared with other methods, DiLitho process, flat bed, ink receptivity, ink transfer during, inks, newspaper printing, newsprint decline in use of, packaging printing, paper requirements, paper smoothness, platemaking, plates, relative cost of, print smoothness, printing, printing tests, pros and cons, publication printing trends in, rotary press, run lengths, tests, trends, web tension Lightweight coated papers; coated papers, book papers, groundwood, problems Lightweight papers; trends Line photography

Linting; lithography Liquid penetration tests Lithography; advantages of offset, alcoholwater dampener, blanket piling, book papers, business forms, catalogs, clay-coated paperboard, coated paper properties, color variation, growth, inks, linting, mechanical strength tests, newspaper printing, newsprint, packaging printing, paper requirements: for sheet-fed, web printing, paper surface strength, paperboard, platemaking, plates, relative cost, press contamination, printing problems, printing process, pros and cons, run lengths, runnability, sheet-fed printing, telephone directories, tests, trends, water resistance of paper, waterless lithography, web offset, web runnability tests.

Magazines; growth of, printing trends Magnetic ink character recognition; business forms, defined, development of, paper requirements, printing requirements Makeready Map papers Mechanical layout Mechanical papers Mimeo papers Missing dots; gravure printing, newspaper printing, perceptual threshold Moire patterns; color reproduction Moisture content of paper; binding, effect on, lithography, importance in, paper requirements, web offset printing Moisture tests; paper Moisture welts Multi-ply board Multi-ply formers

Newspaper printing; angle bars, bay window, color, damaged paper, DiLitho process, folders, formers, general description, ink receptivity, inserts, letterpress printing, lithography, metal plates, methods, missing dots, new developments, offset lithography, trend toward, paper requirements, plastic plates, popularity of various methods, press configurations, press unwind, reel, reel room, roll splicing, roll tension, rolls, unevenly wound, spectacolor, straight runs, web breaks, web-fed rotary press, web tension Newsprint: basis-weight reduction in, consumption trends, demands on, economics, history, imports, ink showthrough, letterpress printing, plate development, printing requirements, production trends, supercalendered, trends, twin-wire paper, web offset: growth of Noncellulose papers; disposable, fiber-based, film-based

Noncontact printing Nonimpact printing

Office copying; dielectric printing Offset lithography Optical character recognition; business forms, carbon paper tissue, defined, description, development, paper requirements

Packaging papers; wrapping paper, applications, consumption trends, greaseproof papers, stiffness test, trends, wastepaper Packaging printing; printing on corrugated board, print tests, trends

Paper classification; printing processes, for various

Paper coating; binders, calendering, cast coating, double coating, history of, ink gloss, related to, materials, methods, paperboard, pigments, safe papers, safety papers, web drying

Paper consumption; decline in, gravure and web offset, GNP, imports and exports, newsprint, packaging papers, paperboard packaging, printing and writing papers, tissue and sanitary papers, trends

Paper end uses; broadly classified, communication, information storage and retrieval, packaging, sanitary products, trends Paper industry; growth of, origins in U.S. Paper production; trends

Paper quality; damaged rolls, twin-wire vs. single wire, unevenly wound rolls Paper requirements; bond paper, book binding, book covers, book papers, box wrapping paper, brightness, bulk, Bureau of Engraving, business forms, bank checks, color standards, coloring books, defects, dielectric printing, DiLito printing process, directories, duplicating papers, elasticity,

electrophotographic printing, formation, gloss, gravure printing, high-speed presses, ink receptivity, inks, ledger papers, letterpress papers, letterpress printing, lightweight coated papers, lithorgraphy, magnetic ink character recognition, mimeo papers, moisture content, NASTO specifications, new technology, newspaper printing, opacity, optical character recognition, paperback books, permanency, press runnability, reference books, screen printing, sheet-fed lithography, sheet-fed printing, stamp papers, textbooks, texture, trade books, uncoated copier papers, web printing papers, web printing, xerographic papers

Paper webs; runnability, tension control, trends Paperback books

Paperboard; coatings, consumption trends, converting roll stock, formers, history of,

gravure, lithography, origins, printing, printing trends, structure, web printing requirements Paperboard packaging; consumption trends Papers; coated, commercial, map, office copying, packaging Parker Print-Surf device Photographs; continuous tone, halftones, stripping Phototypesetting; history of Pigment binders; gravure printing of paperboard Pigments; coatings, used in, color reproduction Pin register Plain paper Plain paper copying; uncoated copier paper, trends Plastics; food packaging Platemaking; electrophotographic plates. lasers, using, new developments, newspaper printing, printing trends, run length, screen printing Platen press Postage stamps, gravure printing, gum requirements, technical requirements Press contamination Print density; ink transfer, as a measurement Print gloss tests Printability; book papers, classification of papers, coated vs. uncoated, defined, gravure papers, letterpress printing, lithography Printing; box wrapping paper, business forms, trends in, catalogs, computers, directories, magnetic ink, packaging paper, tests, limitations of Printing industry; GNP, related to, growth of, profile of Printing methods; broadly classified Printing papers; broadly classified, comsumption trends, label papers Printing, process; binding, direct printing, finishing, offset printing, prepress operations, press operations, trends Printing terms; lack of standards Printing tests; applications, defined, gravure printing, ink holdout, letterpress printing, limitations, lithography, moisture content, paper smoothness, print density, print gloss, printing, surface strength, test developments Printing trends; dot-matrix systems, electrosensitive printing, ink-jet printing, laser printing, platemaking, printing pressure, speed, thermal printing, waterless lithography, xeroprinting Process photography; films, lenses, nonscreen printing processes Publication printing; trends

Quality audit; applications, distinguished from quality control

Quality control; applications, book papers, distinguished from quality audit, printing industry

RHO meter Referee test; applications Reflection densitometer Reprography; new market force Research test; applications Roll damage; packaging operations, influence on, waste Roll defects; gravure printing, web offset printing Roll winding; baggy rolls, paperboard printing, runnability, uneven winding Rollers; nips Rolls; press requirements, slipping cores, splicing, tension, unwinding, waste, wound unevenly Rotary press Rotogravure Run lengths; various printing processes Runnability; book papers, defined, gravure printing, letterpress printing, lightweight papers, lithography, newspaper printing, paper properties, as a function of, paper webs, tests Safe papers Safety papers Sanitary paper products; consumption trends Screen printing; paper requirements, trends, uses Screens; photography with, types of Secondary fibers; in paperboard Sheffield Smoothness Tester Signatures Size-press coating Specialty printing; business forms, commercial, greeting cards, packaging printing Spectacolor Stamp papers; gravure printing, gum requirements, technical requirements Stratified-flow headbox Stripping Surface sizing; book papers Surface strength Synthetic binders Synthetic fibers; in copier papers Synthetic papers; disposable, fiber-based, filmbased

Taber Tester

Testing; applications, defined, gravure printing, ink holdout, letterpress printing, limitations, lithography, moisture content, paper smoothness, print density, print gloss, printing, printing smoothness, surface strength, tear, test development Thermal printing; variable printing, trends Tissue papers; consumption trends Titanium dioxide; paper coating, as a Tailing-blade coating Trimming; uncoated copier paper Twin-wire formers; growth of, origins, stratifiedflow headbox, various designs Twin-wire paper, advantages, ash, used in, fiber distribution, lightweight newsprint, linting characteristics Two-sided paper; described Typesetting; cold type, hot type,

Uncoated copier paper; basis weight, charge acceptance, curl, fiber furnish, image fixing and smoothness, moisture content, office copying, used for, opacity, paper requirements, sizing, smoothness, specifications, stiffness, thickness, trends, trimming Uncoated papers; box wrap, electrophotographic printing, label papers, printability

phototypesetting

Variable printing; xeroprinting, computers, influence of, defined, dielectric printing, dotmatrix printing, electrophotographic printing, electrosensitive printing, electrothermosensitive printing, ink-jet printing, laser printing, magnetic printing, plain-paper copying, principal uses, printing speeds, thermal printing, trends, various processes described, xeroprinting

Waste; color runs, during, roll damage and, web offset printing Waterless lithography; plates Wax-pick test Web breaks; newspaper printing, propagation, tension, importance of Web drying Web letterpress printing Web offset lithography; newsprint, growth in Web offset printing; bible printing, blanket-toblanket, catalogs, common-impression cylinder, newspaper printing, paper requirements, paper waste Web printing; baggy rolls, coated paper properties, letterpress printing, low basis weight, paperboard, run lengths, runnability tests, splicing rolls, tear tests, trends Web tension; gravure printing, letterpress printing, lithography, newspaper printing, paperboard printing, runnability Winders Wrapping paper Writing papers; broadly classified, consumption trends, new markets

Xerographic papers

Xeroprinting

Young's Modulus; paper stiffness