

GOVERNMENT

PAPER

SPECIFICATION STANDARDS

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TO: HEADS OF DEPARTMENTS AND AGENCIES

The U.S. Government Publishing Office (GPO) provides Federal agencies with highly valuable advice and assistance in obtaining their printing needs. One of the ways in which we provide this assistance is in the development and issuance of Government paper standards. The purpose of these standards is to (1) achieve compliance with relevant statutes regarding printing papers; (2) address environmental, workplace safety, and paper longevity issues; and (3) maximize savings in the Government's paper purchases and ultimately your print projects.

These standards are available for use by all departments of the Government and their field offices. Some standards are specialty grades with limited availability and have been designated within the standard. Generally these stocks are procured as mill run quantities. There is maximum flexibility in specifying color, texture, and recycled content.

The use of these standards will achieve the greatest possible savings in paper stocks for your agency's printing needs.

If you have any questions about unique substrates such as paper manufactured with security features, please contact your National Accounts Manager.

Please do not hesitate to contact your GPO customer service representative with any suggestions you may have to improve this publication.

Sincerely,

Government Publishing Office

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This publication has been divided into five sections:

Part 1 Specifications, consists of the 103 standards.

Part 2 Testing Standards and Definition of Terms, compiles definition of terms used in the standards and the test methods used in measuring the characteristics and properties of papers and paper boards.

Part 3 Standard Samples and Drawings, gives information on the standard samples program, drawings of common envelope construction-types, and Government watermarks.

Part 4 Statutory Authority and Acceptance Criteria, provides statutory references for the setting of standards and the evaluation program for determining compliance with the paper standard.

Part 5 Basis Weights and Thickness Data, is a summary of the basis weight and thickness data for the specifications listed in Part 1.

There are 14 classes of papers listed in the table of contents. Each item of paper is identified by a paper code which indicates both class and grade. For example, JCP A60, the "A" refers to the class of printing paper and the 60 to the grade "offset book." Similarly for JCP L20, "L" refers to cover paper class and 20 to the "vellum-finish" grade. The four-digit number associated with the FSC prefix is a General Services Administration Federal Supply Catalog designation and is included when available.

The use of optical (fluorescent) brighteners is prohibited in those grades with 50% and 100% cotton/linen content as well as those papers specified for use in optical scanners.

Part 1

SPECIFICATIONS

Runnability Requirements for Paper Used in a Federal Printing Plant

September 2019

Sizing: Paper shall be surface-sized and internal-sized, suitable for satisfactory printing on both sides of the paper on high-speed, heat-set web presses equipped with low VOC¹ dampening systems.

For Basis weight: 25 by 38 inches, 500 sheets (pounds), the following tensile strength applies for roll paper stock with these basis weights:

	35	40	50	60	70	80
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Tensile strength: Average not less than (kg/in) for the machine direction (MD) and cross direction (CD)-

MD	6.0	6.4	9.0	9.7	10.5	11.5
CD	2.6	3.1	3.6	4.1	4.6	5.1

Pick resistance —

Sheet-fed: Average each side not less than 13-A Dennison wax number for sheets sizes exceeding 17 by 22 inches; 10-A for sheet sizes 17 by 22 inches or less.

Web offset paper: Average each side not less than 10-A. No individual specimen shall average less than 8-A.

Curl: Paper shall lie flat with either no tendency to curl or with a curl which can be overcome under reasonable working conditions.

Surface: Shall be free from lint, fuzz, or any particles which will pick, lift, fluff, or pile on the blanket under normal press conditions.

Size and trim —

Sheets: Paper shall be furnished in the sizes(s) ordered and shall be flat, trimmed square on four sides with clean smooth edges, and evenly jogged. The tolerance of $\pm 1/16$ inch shall be allowed except for sheets $8\frac{1}{2} \times 14$ " or less; then a tolerance of $\pm 1/32$ inch shall be allowed. Successive sheets within any package shall not differ from each other by more than $1/64$ inch. Paper with the long dimension 32 inches or less shall be considered square if the variation does not exceed $1/32$ inch; over 32 inches, $1/16$ inch.

Rolls: Roll width and diameter shall be as ordered. A tolerance of $\pm 1/16$ inch shall be allowed for width and ± 1 inch for diameter.

Roll winding: Roll paper shall be tightly wound at even tension and shall not contain more than the specified maximum number of splices per roll. The number of splices permitted per roll is determined by the roll diameter. On rolls 40 inches or less, a maximum of three splices per roll shall be allowed. On rolls over 40 inches, a maximum of four splices per roll shall be allowed. Splices shall be neatly and securely overlap-pasted and made with a repulpable adhesive which will not permit the splice to separate while passing through a drying oven maintained at 200°C. The adhesive may be applied from a tape from backing, provided the backing is removed, leaving only the adhesive component of the splice. The adhesive shall not cause the splice to adhere to adjacent laps. The tails of the splices shall be neatly and evenly removed without damage to adjacent laps. Splices shall be flagged at both ends with projecting colored markers, not pasted to the splice, or otherwise clearly marked.

Grain: Direction of the grain on flat paper shall be as ordered.

Color: Shall match the Government's standard sample for color. A deviation of $DE(CIELAB) = 5.0$ from the color standard is allowed. As appropriate, the CIELAB values (III D65, 10°observer) for the color standard will be specified in the solicitation. The common color standards are found in Part 3.

The paper in the order (or publication) shall be uniform, and the color variation shall not exceed $DE(CIELAB) = 1.0$.

Pressroom conditions: The bulk of this paper will be used in air-conditioned pressrooms maintained at $24^{\circ}\text{C} \pm 2^{\circ}\text{C}$ and $45\% \pm 8\%$ relative humidity.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. The acceptance criteria Part 4 shall apply except as noted.

¹ VOC = Volatile organic compounds; refers to organic chemical compounds which have significant vapor pressures and can affect the environment and human health.

JCP A15 — NEWSPRINT

Text Paper — FSC 9310

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For minimum quality, face and back offset printing of newsletters, catalogs, pamphlets, newspapers, etc., of a non-permanent nature. Printed matter may include text, line illustrations, and 65-line screen halftones.

Stock: No post-consumer fiber is required. Any percentage of post-consumer fiber is encouraged provided that the requirements of this Standard are met.

Basis weight: 24 by 36 inches, 500 sheets
(pounds) 26.1 27.7 30.0

A tolerance of $\pm 5\%$ shall be allowed.

Tearing strength:
Average each direction not less than
(grams) 18 20 22

Opacity: Average not less than
(percent) 87 89 90

No individual specimen shall average less than
(percent) 85 87 88

Thickness: Average (inch) 0.0027 0.0028 0.0030

A tolerance of ± 0.0005 inch shall be allowed.
Paper shall be uniform and shall not vary more than 0.0004 inch from one edge to the other.

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Brightness: Shall target 53% or as specified.

Color: The paper in the order (or publication) shall be uniform and the color variation shall not exceed $DE(CIELAB) = 1.0$

Finish and formation: Shall be uniform.

Cleanliness: Shall match the Government standard.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. The acceptance criteria in Part 4 shall apply.

JCP A25 — UNCOATED HEAT-SET MACHINE-FINISH WEB TEXT

Text Paper — FSC 9310

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For simultaneous face and back web offset printing of books, pamphlets, catalogs, periodicals, etc. Low bulk. Printed matter may include text, line illustrations, and halftones up to 150-line screen. A mill run grade.

Stock: Groundwood pulp not to exceed 1%.

Note: No post-consumer fiber is required. Any percentage of post-consumer fiber is encouraged provided that the requirements of this Standard are met.

Basis weight: 25 by 38 inches, 500 sheets (pounds) 35

A tolerance of $\pm 5\%$ shall be allowed.

Acidity: pH value shall average not less than 6.5

Bursting strength: Average not less than (lb/in²) 11

Opacity: Average not less than (percent) 84

No individual specimen shall average less than (percent) 82

Thickness: Average (mils) 2.2

A tolerance of ± 0.0003 inch shall be allowed.

Paper shall be uniform and shall not vary more than 0.0004 inch from edge to edge.

No individual specimen shall exceed (mils) 2.8

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Brightness: Shall target 88% or as specified.

Color: The paper in the order (or publication) shall be uniform and the color variation shall not exceed DE(CIELAB)= 1.0

Finish and formation: Shall be uniform.

Cleanliness: The dirt count for each side of the paper shall not exceed 250 specks per square meter. No sample sheet (8½ x 11" in size) shall contain more than one defect with equivalent area of 0.25 mm² or greater.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. The acceptance criteria in Part 4 shall apply.

JCP A50 — UNCOATED MACHINE-FINISH BOOK END

Text Paper — FSC 9310

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For end leaves of bound books, some of which may be printed by the offset process. Printed matter may include line illustrations and halftones up to 150-lines screen. A mill run grade.

Stock: 100% bleached chemical woodpulp.

Note: Not less than 30% post-consumer fiber. Any percent over 30 percentage points is encouraged provided that the requirements of this Standard are met.

Basis weight: 25 by 38 inches, 500 sheets
(pounds) 80

A tolerance of $\pm 5\%$ shall be allowed.

Acidity: pH value by cold extraction shall average not less than 7.0. The paper shall contain not less than 2% calcium carbonate.

Folding endurance: Average each direction not less than (M.I.T. double fold) 30

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Brightness: Shall target 72% or as specified.

Color: The paper in the order (or publication) shall be uniform and the color variation shall not exceed DE(CIELAB)= 1.0

Finish and formation: Shall be uniform.

Cleanliness: The dirt count for each side of the paper shall not exceed 250 specks per square meter. No sample sheet (8½ x 11" in size) shall contain more than one defect with equivalent area of 0.25 mm² or greater.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. The acceptance criteria in Part 4 shall apply.

JCP A55 — HEAT-SET WEB TEXT

Text Paper — FSC 9310

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For simultaneous face and back web offset printing of books, pamphlets, catalogs, folders, circulars, etc. Printed matter may include text, line illustrations and halftones up to 150-line screen. Slitting and pasting and/or cross perforating are included in press capabilities.

Stock: Groundwood pulp not to exceed 1%.

Note: No post-consumer fiber is required. Any percentage of post-consumer fiber is encouraged provided that the requirements of this Standard are met.

Sizing: Paper shall be surface and internal sized suitable for satisfactory printing on both sides of the paper on high-speed heat-set web presses equipped with low VOC¹ dampening systems.

Basis weight: 25 by 38 inches, 500 sheets
(pounds) 40 50 60 70 80

A tolerance of ±5% shall be allowed.

Acidity: pH value shall average not less than 6.5

Tensile strength: Average not less than
Machine direction (kg/in) 6.4 9.0 9.7 10.5 11.5
Cross direction (kg/in) 3.1 3.6 4.1 4.6 5.1

Bursting strength: Average not less than
(lb/in²) 13 15 18 22 25

Opacity: Average not less than
(percent) 86 89 91 92 94

No individual specimen shall average less than
(percent) 84 87 89 90 92

Thickness: Average (mils) 3.0 3.9 4.7 5.5 6.3

A tolerance of ±0.0005 inch shall be allowed. Paper shall be uniform and shall not vary more than 0.0004 inch from edge to edge.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. The acceptance criteria in Part 4 shall apply.

¹VOC = Volatile organic compounds; refers to organic chemical compounds which have significant vapor pressures and can affect the environment and human health.

Pick resistance: Average each side not less than 10-A Dennison wax number No individual specimen shall average less than 8-A Dennison wax number.

Surface: Shall be free from lint, fuzz, or any particles which will pick, lift, fluff, or pile on the blanket under normal press conditions.

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Brightness: Shall target not less than 90% or as specified.

Color: The paper in the order (or publication) shall be uniform and the color variation shall not exceed DE(CIELAB) = 1.0.

Finish and formation: Shall be uniform.

Cleanliness: The dirt count for each side of the paper shall not exceed 650 specks per square meter. No sample sheet (8½ x 11" in size) shall contain more than one defect with equivalent area of 0.25 mm² or greater.

Pressroom conditions: The bulk of this paper will be used in air-conditioned pressrooms maintained at 24°C ±2°C and 45% ±8% relative humidity.

JCP A60 — UNCOATED TEXT

Text Paper — FSC 9310

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For face and back multicolor offset printing of books, pamphlets, catalogs, folders, circulars, etc. The 40-pound stock may not be suitable for solid reverses or heavy halftones. Printed matter may include text, line illustrations and halftones up to 150-line screen.

Stock: Groundwood pulp not to exceed 1%.

Note: No post-consumer fiber is required. Any percentage of post-consumer fiber is encouraged provided that the requirements of this Standard are met.

Basis weight: 25 by 38 inches, 500 sheets
(pounds) 40 50 60 70 80

A tolerance of ±5% shall be allowed.

Acidity: pH value shall average not less than 6.5

Bursting strength: Average not less than
(lb/in²) 13 15 18 22 25

Opacity: Average not less than
(percent) 86 89 91 92 94

No individual specimen shall average less than
(percent) 84 87 89 90 92

Thickness: Average (mils) 3.0 3.9 4.7 5.5 6.3

A tolerance of ±0.0005 inch shall be allowed. Paper shall be uniform and shall not vary more than 0.0004 inch from edge to edge.

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Brightness: Shall target 88% or as specified.

Color: The paper in the order (or publication) shall be uniform and the color variation shall not exceed DE(CIELAB)= 1.0

Finish and formation: Shall be uniform.

Cleanliness: The dirt count for each side of paper shall not exceed 650 specks per square meter. No sample sheet (8½ x 11" in size) shall contain more than one defect with equivalent area of 0.25 mm² or greater.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. The acceptance criteria in Part 4 shall apply except as noted above.

JCP A61 — NO. 1 SMOOTH-FINISH TEXT

Text Paper — FSC 9310

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For highest quality face and back offset printing of books, pamphlets, folders, etc. Lower bulk. Printed matter may include text, line illustrations, halftones up to 150-line screen and solid reverses.

Stock: 100% bleached chemical pulp.

Note: Not less than 30% post-consumer fiber. Any percent over 30 percentage points is encouraged provided that the requirements of this Standard are met.

Basis weight: 25 by 38 inches, 500 sheets
(pounds) 50 60 70 80

A tolerance of $\pm 5\%$ shall be allowed.

Acidity: pH value by cold extraction shall average not less than 7.0. The paper shall contain not less than 2% calcium carbonate.

Bursting strength: Average not less than
(lb/in²) 21 25 29 33

Opacity: Average not less than
(percent) 92 93 94 95

No individual specimen shall average less than
(percent) 90 91 92 93

Thickness: Average (mils) 3.9 4.7 5.5 6.3

A tolerance of ± 0.0005 inch shall be allowed.

Paper shall be uniform and shall not vary more than 0.0004 inch from edge to edge.

Smoothness: Average each side not to exceed
(Sheffield units) (applies to all weights) 140

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Brightness: Shall target 88% or as specified.

Color: The paper in the order (or publication) shall be uniform and the color variation shall not exceed DE(CIELAB)= 1.0.

Finish and formation: Shall be uniform with a smooth finish.

Cleanliness: The dirt count for each side of the paper shall not exceed 250 specks per square meter. No sample sheet (8½ x 11" in size) shall contain more than one defect with an equivalent area of 0.25 mm² or greater.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. The "precision requirements" of the acceptance criteria in Part 4 shall apply except as noted in the specification.

JCP A63 — UNCOATED COLORED TEXT

Text Paper — FSC 9310

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For face and back multicolor offset printing of books, pamphlets, folders, circulars, etc.. Printed matter may include text, line illustrations, and halftones up to 150-line screen and solid reverses.

Stock: Groundwood pulp, not to exceed 1%.

Note: Not less than 30% post-consumer fiber. Any percent over 30 percentage points is encouraged provided that the requirements of this Standard are met.

Basis weight: 25 by 38 inches, 500 sheets
(pounds) 50 60 70 80

A tolerance of $\pm 5\%$ shall be allowed.

Bursting strength: Average not less than
(lb/in²) 16 19 22 25

Opacity: Average not less than
(percent) 90 92 93 94

No individual specimen shall average less than
(percent) 88 90 91 92

Thickness: Average (mils) 3.9 4.7 5.5 6.3

A tolerance of ± 0.0005 inch shall be allowed. Paper shall be uniform and shall not vary more than 0.0004 inch from edge to edge.

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Color: The paper in the order (or publication) shall be uniform and shall not exceed DE(CIELAB)= 1.0. The color shall match one of the established color standards in Part 3 or match a color sample supplied by the ordering agency. Colors shall not fade or transfer (rub off) and shall appear even and uniform on the surface of the sheet. The sheet shall not be 2-sided.

Finish and formation: Shall be uniform.

Cleanliness: The dirt count for each side of the paper shall not exceed 250 specks per square meter. No sample sheet (8½ x 11" in size) shall contain more than one defect with equivalent area of 0.25 mm² or greater.

Note: This property is automatically waived when the ordering agency has specified a sheet with "fibers" or "specks" in the paper surface.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. The acceptance criteria in Part 4 shall apply except as noted above.

Color: For a tight color match, designate a "precision" match in the solicitation. If no designation is specified, the "regular" acceptance criteria will be applied in judging the acceptability of the color match between the standard and the supplied paper stock for hue, chroma, and saturation.

JCP A65 — UNCOATED LIGHT-WEIGHT GROUNDWOOD TEXT

Text Paper — FSC 9310

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For face and back web offset printing of books, pamphlets, catalogs, periodicals, etc. of a non-permanent nature. Low bulk. Printed matter may include text, line illustrations, and halftones up to 120-line screen. A mill run grade.

Stock: Mechanical Pulp. No post-consumer fiber is required.

Basis weight: 25 by 38 inches, 500 sheets
(pounds) 35

A tolerance of $\pm 5\%$ shall be allowed.

Bursting strength: Average not less than (lb/in²) 11

Opacity: Average not less than (percent) 88

No individual specimen shall average less than
(percent) 86

Thickness: Average (mils) 3.0

A tolerance of ± 0.0005 inch shall be allowed. Paper shall be uniform and shall not vary more than 0.0004 inch from edge to edge.

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Brightness: Shall target 72% or as specified.

Color: The paper in the order (or publication) shall be uniform and the color variation shall not exceed DE (CIELAB) = 1.0.

Finish and formation: Shall be uniform.

Cleanliness: Shall match the Government Standard.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. The acceptance criteria in Part 4 shall apply.

JCP A70 — UNCOATED 100% RECYCLED TEXT

Text Paper — FSC 9310

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For minimum quality face and back offset printing of books, pamphlets, catalogs, folders, circulars, open forms, etc. of a non-permanent nature. Printed forms are suitable for execution with ball point and felt tip pens. Printed matter may include text and line illustrations.

Stock: Not less than 100% total recovered fiber of which at least 50% shall be post-consumer fiber. Any percent over 50 percentage points is encouraged provided that the requirements of this Standard are met.

Basis weight: 25 by 38 inches, 500 sheets
(pounds) 40 45 50 60 70 80 100

A tolerance of $\pm 5\%$ shall be allowed.

Bursting strength: Average not less than
(lb/in²) 12 13 15 18 21 24 30

Opacity: Average not less than
(percent) 87 88 90 92 94 95 96

No individual specimen shall average less than
(percent) 85 86 88 90 92 93 94

Thickness: Average
(mils) 3.0 3.5 4.0 4.8 5.5 6.2 8.2

A tolerance of ± 0.0005 inch shall be allowed. Paper shall be uniform and shall not vary more than 0.0004 inch from edge to edge.

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Brightness: Shall target not less than 85% or as specified.

Color: The paper in the order (or publication) shall be uniform and the color variation shall not exceed DE(CIELAB) = 1.0.

Finish and formation: Shall be uniform.

Cleanliness: The dirt count for each side of the paper shall not exceed 650 specks per square meter. No sample sheet (8½ x 11" in size) shall contain more than one defect with equivalent area of 0.25 mm² or greater.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. The acceptance criteria in Part 4 shall apply.

JCP A75 — LIGHT-WEIGHT TEXT (BIBLE PAPER)

Text Paper — FSC 9310

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For face and back offset printing of books, pamphlets, catalogs, folders, circulars, etc. Low bulk. Printed matter may include text, line illustrations, and halftones up to 150-line screen. A mill run grade.

Stock: 100% bleached chemical pulp.

Note¹: Post-consumer fiber in any percentage is encouraged provided that the requirements of this Standard are met.

Basis weight: 25 by 38 inches, 500 sheets
(pounds) 30

A tolerance of ±5% shall be allowed.

Acidity: pH value by cold extraction shall be not less than 7.0. The paper shall contain not less than 2% calcium carbonate.

Bursting strength: Average not less than (lb/in²) 15

Opacity: Average not less than (percent) 88
Note: Any deviation in this requirement is sufficient cause for rejection of the paper.

Thickness: Average (mils) 2.1

A tolerance of +0.0001 inch and -0.0002 inch shall be allowed.

Smoothness: Average each side not to exceed
(Sheffield units) 60 to 100

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Brightness: Shall target not less than 88% or as specified.

Color: The paper in the order (or publication) shall be uniform and the color variation shall not exceed DE (CIELAB) = 1.0.

Finish and formation: Shall be uniform.

Cleanliness: The dirt count for each side of the paper shall not exceed 100 specks per square meter. No sample sheet (8½ x 11" in size) shall contain more than one defect with equivalent area of 0.25 mm² or greater.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards* Part 2. The acceptance criteria in Part 4 shall apply except as noted in the specification.

¹ This is a specialty grade with low Government usage. A post-consumer fiber content for this grade is not practical for cost and technological reasons.

JCP A80 — OPACIFIED TEXT

Text Paper — FSC 9310

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For high quality multicolor face and back offset printing of books, pamphlets, folders, etc. Printed matter may include text, line illustrations, halftones up to 150-line screen, and solid reverses.

Stock: 100% bleached chemical wood pulp.

Note: No post-consumer fiber is required. Any percentage of post-consumer fiber is encouraged provided that the requirements of this Standard are met.

Basis weight: 25 by 38 inches, 500 sheets
(pounds) 40 50 60

A tolerance of $\pm 5\%$ shall be allowed.

Acidity: pH value by cold extraction shall average not less than 7.0. The paper shall contain not less than 2% calcium carbonate.

Bursting strength: Average not less than
(lb/in²) 16 20 25

Opacity: Average not less than
(percent) 89 91 93

No individual specimen shall average less than
(percent) 87 89 91

Thickness: Average (mils) 3.1 3.9 4.7

A tolerance of ± 0.0005 inch shall be allowed. Paper shall be uniform and shall not vary more than 0.0004 inch from edge to edge.

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Brightness: Shall target not less than 88% or as specified.

Color: The paper in the order (or publication) shall be uniform and the color variation shall not exceed DE(CIELAB) = 1.0.

Finish and formation: Shall be uniform.

Cleanliness: The dirt count for each side of the paper shall not exceed 250 specks per square meter. No sample sheet (8½ x 11" in size) shall contain more than one defect with an equivalent area of 0.25 mm² or greater.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. The acceptance criteria in Part 4 shall apply except as noted in the specification.

JCP A90 – VELLUM-FINISH TEXT; WHITE AND COLORS

Text Paper — FSC 9310

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For high quality face and back and offset printing of books, pamphlets, folders, etc. Printed matter may include text, line illustrations, halftones up to 150-line screen, and solid reverses.

Stock: 100% bleached chemical pulp.

Note: Not less than 30% post-consumer fiber. Any percent over 30 percentage points is encouraged provided that the requirements of this Standard are met.

Basis weight: 25 by 38 inches, 500 sheets
(pounds) 50 60 70 80 100

A tolerance of ±5% shall be allowed.

Acidity: pH value by cold extraction shall be not less than 7.0. The paper shall contain not less than 2% calcium carbonate.

Bursting strength: Average not less than
(lb/in²) 19 24 27 28 32

Opacity: Average not less than
(percent) 92 93 94 95 96

No individual specimen shall average less than
(percent) 90 91 92 93 94

Thickness: Average (mils) 4.3 5.1 5.9 6.7 8.2

A tolerance of ±0.0005 inch shall be allowed. Paper shall be uniform and shall not vary more than 0.0004 inch from one edge to edge.

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Brightness: The white paper shall target not less than 88% or as specified.

Color: The paper in the order (or publication) shall be uniform and the color variation shall not exceed DE (CIELAB) = 1.0. For colored stock, paper shall match one of the established color standards in Part 3 or match a color sample supplied by the ordering agency. Colors shall not fade or transfer (rub off) and shall appear even and uniform on the surface of the sheet. The sheet shall not be 2-sided.

Finish: Paper shall have a vellum-finish.

Formation: Shall be uniform.

Cleanliness: The dirt count for each side of the paper shall not exceed 650 specks per square meter. No sample sheet (8½ x 11" in size) shall contain more than one defect with equivalent area of 0.25 mm² or greater.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. The acceptance criteria in Part 4 shall apply except as noted in the specification.

Color: For a tight color match, designate a "precision" match in the solicitation. If no designation is specified, the "regular" acceptance criteria will be applied in judging the acceptability of the color match between the standard and the supplied paper stock for hue, chroma, and saturation.

JCP A95 — HI-BULK TEXT (RETURN MAILER)

Text Paper — FSC 9310

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For face and back offset printing of return mailers. Printed matter may include text, line illustrations, halftones up to 150-line screen and solid reverses. Grade complies with the U.S. Postal Service minimum caliper (thickness) requirement for return mailers.

Stock: Groundwood pulp not to exceed 1%.

Note: Not less than 30% post-consumer fiber. Any percent over 30 percentage points is encouraged, provided that the requirements of this Standard are met.

Basis weight: 25 by 38 inches, 500 sheets (pounds) 70

A tolerance of $\pm 5\%$ shall be allowed.

Bursting strength: Average not less than (lb/in²) 16

Opacity: Average not less than (percent) 91

No individual specimen shall average less than (percent) 89

Thickness: Average not less than (mils) 7.0

Paper shall be uniform and shall not vary more than 0.0004 inch from edge to edge.

Note: Any specimen averaging less the 0.0070 inch shall be sufficient cause for rejection of the paper.

Porosity: Average not less than (seconds) 25

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Brightness: Shall target 79% or as specified.

Color: The paper in the order (or publication) shall be uniform and the color variation shall not exceed DE (CIELAB)= 1.0.

Finish and formation: Shall be uniform.

Cleanliness: The dirt count for each side of the paper shall not exceed 650 specks per square meter. No sample sheet (8½ x 11" in size) shall contain more than one defect with an equivalent area of 0.25 mm² or greater.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. The acceptance criteria in Part 4 shall apply except as noted in the specification.

JCP A100 – ANTIQUE TEXT

Text Paper – FSC 9310

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For multicolor face and back offset printing of books, pamphlets, folders, brochures, etc. Has a rough, soft finish, particularly suited for publications with extensive reading matter. High bulk. Printed matter may include text, line illustrations and halftones up to 150-line screen. A mill run grade.

Stock: Groundwood pulp not to exceed 1%.

Note: Not less than 30% post-consumer fiber. Any percent over 30 percentage points is encouraged, provided that the requirements of this Standard are met.

Basis weight: 25 by 38 inches, 500 sheets
(pounds) 45 60 70

A tolerance of $\pm 5\%$ shall be allowed.

Acidity: pH value shall average not less than 6.5

Bursting strength: Average not less than
(lb/in²) 13 18 21

Opacity: Average not less than
(percent) 89 91 94

No individual specimen shall average less than
(percent) 87 89 92

Thickness: Average (mils) 3.9 5.1 5.9

A tolerance of ± 0.0005 inch shall be allowed. Paper shall be uniform and shall not vary more than 0.0004 inch from edge to edge.

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Brightness: Shall target 72% $\pm 2\%$ or as specified.

Color: The paper in the order (or publication) shall be uniform and the color variation shall not exceed DE(CIELAB) = 1.0.

Finish and formation: Shall be uniform.

Cleanliness: The dirt count for each side of the paper shall not exceed 250 specks per square meter. No sample sheet (8½ x 11" in size) shall contain more than one defect with equivalent area of 0.25 mm² or greater.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. The acceptance criteria in Part 4 shall apply.

JCP A110 — 50% COTTON ANTIQUE TEXT

Text Paper — FSC 9310

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For multicolor face and back offset printing of books, catalogs, pamphlets, etc. requiring above average durability and permanence. Has a rough, soft finish particularly suited for publications with extensive reading matter. High bulk. Printed matter may include text, line illustrations and halftones up to 150-line screen. A mill run grade.

Stock: Not less than 50% cotton or linen fibers.
Groundwood pulp not to exceed 1%.

No fluorescent (optical) brighteners shall be added to the pulp or paper during manufacture. Fluorescence, due to residual white water, broke, or natural fibers, is permissible, provided the increase in reflectance measured with and without the ultraviolet component of a light source of 3100 Kelvin in combination with a C.I.E. (International Commission on Illumination) Z (blue) filter, does not exceed 2.0%.

Note: Not less than 30% post-consumer fiber. Any percent over 30 percentage points is encouraged, provided that the requirements of this Standard are met.

Basis weight: 25 by 38 inches, 500 sheets
(pounds) 40
A tolerance of $\pm 5\%$ shall be allowed.

Acidity: pH value shall average not less than 7.0

Bursting strength: Average not less than (lb/in²) 13

Opacity: Average not less than (percent) 89
No individual specimen shall average less than
(percent) 87

Thickness: Average not less than (mils) 3.5

A tolerance of ± 0.0005 inch shall be allowed. Paper shall be uniform and shall not vary more than 0.0004 inch from edge to edge.

Porosity: Average not less than (seconds) 25

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Brightness: Shall target 72% $\pm 2\%$ or as specified.

Color: The paper in the order (or publication) shall be uniform and the color variation shall not exceed DE (CIELAB) = 1.0.

Finish and formation: Shall be uniform.

Cleanliness: The dirt count for each side of the paper shall not exceed 250 specks per square meter. No sample sheet (8½ x 11" in size) shall contain more than one defect with equivalent area of 0.25 mm² or greater.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. The acceptance criteria in Part 4 shall apply.

JCP A120 — 50% COTTON LAID-FINISH ANTIQUE TEXT

Text Paper — FSC 9310

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For multicolor face and back offset printing of pamphlets, brochures, invitations, programs, etc., requiring attractive appearance and/or above average durability and above average permanence. Has a rough, soft finish with decorative chain marks running at right angles to laid lines. High bulk. Printed matter may include text, line illustrations, and halftones up to 150-line screen.

Stock: Not less than 50% cotton or linen fibers.
Groundwood pulp not to exceed 1%.

No fluorescent (optical) brighteners shall be added to the pulp or paper during manufacture. Fluorescence, due to residual white water, broke, or natural fibers, is permissible, provided the increase in reflectance, measured with and without the ultraviolet component of a light source of 3100 Kelvin in combination with a C.I.E. (International Commission on Illumination) Z (blue) filter, does not exceed 2.0%.

Note: Not less than 30% post-consumer fiber. Any percent over 30 percentage points is encouraged, provided that the requirements of this Standard are met.

Basis weight: 25 by 38 inches, 500 sheets
(pounds) 70

A tolerance of $\pm 5\%$ shall be allowed.

Acidity: pH value shall average not less than 7.0

Bursting strength: Average not less than (lb/in²) 19

Opacity: Average not less than (percent) 90

No individual specimen shall average less than
(percent) 88

Thickness: Average (mils) 5.5

A tolerance of ± 0.0005 inch shall be allowed. Paper shall be uniform and shall not vary more than 0.0004 inch from edge to edge.

Chain marks: Shall run parallel to machine direction of the sheet and match the standard sample.

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Brightness: Shall target 72% $\pm 2\%$ or as specified.

Color: The paper in the order (or publication) shall be uniform and the color variation shall not exceed DE (CIELAB) = 1.0.

Finish: Paper shall have a laid-finish.

Formation: Shall be uniform.

Cleanliness: The dirt count for each side of the paper shall not exceed 250 specks per square meter. No sample sheet (8½ x 11" in size) shall contain more than one defect with an equivalent area of 0.25 mm² or greater.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. The acceptance criteria in Part 4 shall apply.

JCP A160 — COATED ONE-SIDE TEXT (C1S)

Text Paper — FSC 9310

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For multicolor face and back offset printing of posters, envelopes, etc. Printed matter may include text, line illustrations, halftones up to 150-line screen, and solids. Coated side is for 4-color process printing.

Stock: Free from groundwood and unbleached wood pulp.

Note: No post-consumer fiber is required. Any percentage of post-consumer fiber is encouraged provided that the requirements of this Standard are met.

Basis weight: 25 by 38 inches, 500 sheets
(pounds) 60 70 80 100
A tolerance of $\pm 5\%$ shall be allowed.

Tearing strength: Average each direction not less than
(grams) 40 50 55 60

Opacity: Average not less than
(percent) 90 91 92 94

No individual specimen shall average less than
(percent) 88 89 90 92

Thickness: Average (mils) 3.2 3.9 4.5 5.2

A tolerance of ± 0.0005 inch shall be allowed. Paper shall be uniform and shall not vary more than 0.0004 inch from one edge to edge.

Gloss of coated side (75°): Average not less than
(percent) (applies to all weights) 60

Smoothness: Average each side not to exceed
(Sheffield units) (applies to all weights) 55

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Brightness of coated side: Average not less than 85% or as specified.

Color: The paper in the order (or publication) shall be uniform and the color variation shall not exceed DE (CIELAB) = 1.0.

Formation: Coating shall be uniform; shall be uniformly applied; shall not be gritty, mottled, stippled, or ribbed in appearance; and shall not exhibit cracks or flake off.

Cleanliness: The dirt count for each side of the paper shall not exceed 250 specks per square meter. No sample sheet (8½ x 11" in size) shall contain more than one defect with an equivalent area of 0.25 mm² or greater.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. The acceptance criteria in Part 4 shall not apply except as noted in the specification.

JCP A175 — GLOSS-COATED TEXT (PUBLICATION GRADE)

Text Paper — FSC 9310

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For face and back offset printing. Grade suited for long run of books, pamphlets, magazines, periodicals, brochures, etc. Printed matter may include text, line illustrations, and halftones up to 150-line screen.

Stock: Free from groundwood or unbleached wood pulp.

Note: No post-consumer fiber is required. Any percentage of post-consumer fiber is encouraged provided that the requirements of this Standard are met.

Basis weight: 25 by 38 inches, 500 sheets (pounds) 38

A tolerance of $\pm 5\%$ shall be allowed.

Bursting strength: Average not less than (lb/in²) 11

Opacity: Average not less than (percent) 89

No individual specimen shall average less than (percent) 87

Thickness: Average not less than (mils) 2.2

A tolerance of ± 0.0005 inch) shall be allowed. Paper shall be uniform and shall not vary more than 0.0004 inch from edge to edge.

Gloss (75°): Average each side not less than (percent) 40

Smoothness: Average each side not to exceed (Sheffield units) 65

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Brightness: Average not less than 80% or as specified.

Color: The paper in the order (or publication) shall be uniform and the color variation shall not exceed DE(CIELAB)= 1.0.

Formation: Coating shall be uniform; shall be uniformly applied; shall not be gritty, mottled, stippled, or ribbed in appearance, and shall not exhibit cracks or flake off.

Cleanliness: The dirt count for each side of the paper shall not exceed 100 specks per square meter. No sample sheet (8½ x 11" in size) shall contain more than one defect with equivalent area of 0.25 mm² or greater.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. The acceptance criteria in Part 4 shall apply.

JCP A180 — GLOSS-COATED TEXT

Text Paper — FSC 9310

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For high quality multicolor face and back printing of books, pamphlets, magazines, periodicals, brochures, etc. Printed matter may include text, line illustrations and halftones up to 175-line screen.

Stock: Groundwood pulp, not to exceed 1%.

Note: No post-consumer fiber is required. Any percentage of post-consumer fiber is encouraged provided that the requirements of this Standard are met.

Basis weight: 25 by 38 inches, 500 sheets

(pounds)	50	60	70	80
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A tolerance of ±5% shall be allowed.

Acidity: Average pH value of the coating not less than 6.5

Bursting strength: Average not less than

(lb/in ²)	11	13	20	30
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Opacity: Average not less than

(percent)	91	92	93	94
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No individual specimen shall average less than

(percent)	89	90	91	92
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Thickness: Average (mils)

2.6	3.0	3.3	3.6
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A tolerance of ±0.0005 inch shall be allowed. Paper shall be uniform and shall not vary more than 0.0004 inch from one edge to edge.

Gloss (75°): Average each side
(percent) (applies to all weights) 50

Smoothness: Average each side not to exceed
(Sheffield units) (applies to all weights) 55

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Brightness: Average not less than 85% or as specified.

Color: The paper in the order (or publication) shall be uniform and the color variation shall not exceed DE (CIELAB) = 1.0.

Formation: Coating shall be uniform; shall be uniformly applied; shall not be gritty, mottled, stippled, or ribbed in appearance, and shall not exhibit cracks or flake off.

Cleanliness: The dirt count for each side of the paper shall not exceed 100 specks per square meter. No sample sheet (8½ x 11" in size) shall contain more than one defect with equivalent area of 0.25 mm² or greater.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. The acceptance criteria in Part 4 shall apply excepted as noted in the specification.

JCP A181 — NO. 1 GLOSS-COATED TEXT

Text Paper — FSC 9310

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For highest quality multicolor face and back offset printing of books, pamphlets, magazines, periodicals, brochures, etc. Printed matter may include text, line illustrations and halftones up to 200-line screen.

Stock: Free from groundwood or unbleached wood pulp.

Note: No post-consumer fiber is required. Any percentage of post-consumer fiber is encouraged provided that the requirements of this Standard are met.

Basis weight: 25 by 38 inches, 500 sheets
(pounds) 70 80 100

A tolerance of $\pm 5\%$ shall be allowed.

Acidity: pH value shall average not less than 6.5

Bursting strength: Average not less than
(lb/in²) 20 30 40

Opacity: Average not less than
(percent) 92 93 94

No individual specimen shall average less than
(percent) 90 91 92

Thickness: Average (mils) 3.3 3.7 4.3

A tolerance of ± 0.0005 inch shall be allowed. Paper shall be uniform and shall not vary more than 0.0004 inch from one edge to edge.

Gloss (75°): Average each side not less than
(percent) (applies to all weights) 65

Smoothness: Average each side not to exceed
(Sheffield units) (applies to all weights) 45

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Brightness: Average not less than 92% or as specified.

Color: The paper in the order (or publication) shall be uniform and the color variation shall not exceed DE (CIELAB) = 1.0.

Formation: Coating shall be uniform; shall be uniformly applied; shall not be gritty, mottled, stippled, or ribbed in appearance, and shall not exhibit cracks or flake off.

Cleanliness: The dirt count for each side of the paper shall not exceed 25 specks per square meter. No sample sheet (8½ x 11" in size) shall contain more than one defect with equivalent area of 0.25 mm² or greater.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. The acceptance criteria in Part 4 shall not apply.

JCP A182 — NO. 2 GLOSS-COATED TEXT

Text Paper — FSC 9310

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For highest quality multicolor face and back offset printing of books, pamphlets, magazines, periodicals, brochures, etc. Printed matter may include text, line illustrations and halftones up to 200-line screen.

Stock: Free from groundwood or unbleached wood pulp.

Note: No post-consumer fiber is required. Any percentage of post-consumer fiber is encouraged provided that the requirements of this Standard are met.

Basis weight: 25 by 38 inches, 500 sheets
(pounds) 70 80 100

A tolerance of $\pm 5\%$ shall be allowed.

Acidity: Average pH value of coating not less than 6.5

Bursting strength: Average not less than
(lb/in²) 21 31 40

Opacity: Average not less than
(percent) 91 92 92

No individual specimen shall average less than
(percent) 89 90 90

Thickness: Average (mils) 3.3 3.7 4.3

A tolerance of ± 0.0005 inch shall be allowed. Paper shall be uniform and shall not vary more than 0.0004 inch from edge to edge.

Gloss (75°): Average each side not less than
(percent) (applies to all weights) 60

Smoothness: Average each side not to exceed
(Sheffield units) (applies to all weights) 55

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Brightness: Average not less than 90% or as specified.

Color: The paper in the order (or publication) shall be uniform and the color variation shall not exceed DE (CIELAB) = 1.0.

Formation: Coating shall be uniform; shall be uniformly applied; shall not be gritty, mottled, stippled, or ribbed in appearance, and shall not exhibit cracks or flake off.

Cleanliness: The dirt count for each side of the paper shall not exceed 50 specks per square meter. No sample sheet (8½ x 11" in size) shall contain more than one defect with equivalent area of 0.25 mm² or greater.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. The acceptance criteria in Part 4 shall not apply.

JCP A205 — DURABLE GLOSS-COATED TEXT

Text Paper — FSC 9310

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For multicolor face and back offset printing, principally of maps and charts, covers for books, etc. Good folding endurance. Printed matter may include text, line illustrations, and halftones up to 150-line screen. A mill run grade.

Stock: Free from groundwood and unbleached wood pulp.

Note: No post-consumer fiber is required. Any percentage of post-consumer fiber is encouraged provided that the requirements of this Standard are met.

Basis weight: 25 by 38 inches, 500 sheets (pounds) 70

A tolerance of $\pm 5\%$ shall be allowed.

Folding endurance: Average each direction not less than (MIT double folds) 50

Note: Precision Part 4 applies for this property.

Bursting strength: Average not less than (lb/in²) 29

Opacity: Average not less than (percent) 93

No individual specimen shall average less than (percent) 91

Thickness: Average not less than (mils) 3.7

A tolerance of ± 0.0005 inch shall be allowed. Paper shall be uniform and shall not vary more than 0.0004 inch from one edge to edge.

Gloss (75°): Average each side not less than (percent) 50

Smoothness: Average each side not to exceed (Sheffield units) 65

Blocking: Sheets shall not stick together after being wet with water then allowed to dry in contact with other sheets of the same paper.

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Brightness: Average not less than 88% or as specified.

Color: The paper in the order (or publication) shall be uniform and the color variation shall not exceed DE(CIELAB) = 1.0

Formation: Coating shall be uniform; shall be uniformly applied; shall not be gritty, mottled, stippled, or ribbed in appearance; and shall not exhibit cracks or flake off.

Cleanliness: The dirt count for each side of the paper shall not exceed 50 specks per square meter. No sample sheet (8½ x 11" in size) shall contain more than one defect with equivalent area of 0.25 mm² or greater.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. The acceptance criteria Part 4 shall apply.

JCP A220 — WATER-RESISTANT TEXT

Text Paper — FSC 9310

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For multicolor face and back offset printing of books, pamphlets, manuals, etc., requiring water-resistant properties. Printed matter may include text, line illustrations, and halftones up to 150-line screen. A mill run grade.

Stock: Groundwood or unbleached chemical pulp, singly or mixed, not to exceed 5%; the remainder bleached chemical pulp. The use of melamine-formaldehyde or any material that releases formaldehyde into the atmosphere at concentration of 0.1 parts per million or greater shall not be permitted in the manufacture of this paper.

Note: Not less than 30% post-consumer fiber. Any percent over 30 percentage points is encouraged, provided that the requirements of this Standard are met.

Basis weight: 25 by 38 inches, 500 sheets
(pounds) 60
A tolerance of $\pm 5\%$ shall be allowed.

Acidity: pH value by cold extraction shall average not less than 4.7

Bursting strength: Average not less than
(Dry, lb/in²) 30
(Wet, lb/in²) 13

Opacity: Average not less than (percent) 90
No individual specimen shall average less than (percent) 88

Thickness: Average (mils) 4.2
A tolerance of ± 0.0005 inch shall be allowed. Paper shall be uniform and shall not vary more than 0.0004 inch from edge to edge.

Water resistance: Average not less than
(seconds) 60

Smoothness: Average each side not to exceed
(Sheffield units) 60 to 140

Blocking: Sheets shall not stick together after being wet with water and then allowed to dry in contact with other sheets of the same paper.

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Brightness: Shall target 72% $\pm 2\%$ or as specified.

Color: The paper in the order (or publication) shall be uniform with and the color variation shall not exceed DE(CIELAB)= 1.0.

Formation: Shall be uniform.

Cleanliness: The dirt count for each side of the paper shall not exceed 250 specks per square meter. No sample sheet (8½ x 11" in size) shall contain more than one defect with equivalent area of 0.25 mm² or greater.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. The acceptance criteria in Part 4 shall apply.

JCP A230 — HIGH YIELD (LIGHT COATING) TEXT

Text Paper — FSC 9310

Use information: This paragraph is informational only and is not exclusively definitive of the end use. Light coating provides a better print quality. Good yield. Printed matter may include text, line illustrations and light halftones. A mill run grade.

Stock: No post-consumer fiber is required. Any percentage of post-consumer fiber is encouraged provided that the requirements of this Standard are met.

Basis weight: 25 by 38 inches, 500 sheets
(pounds) 35 38 40 45 50

A tolerance of $\pm 5\%$ shall be allowed.

Bursting strength: Average not less than
(lb/in²) 11 12 13 15 16

Opacity: Average not less than
(percent) 86 87 88 90 91

No individual specimen shall average less than
(percent) 84 85 86 88 89

Thickness: Average (mils) 2.9 3.2 3.3 3.5 3.8

A tolerance of ± 0.0005 inch shall be allowed. Paper shall be uniform and shall not vary more than 0.0004 inch from edge to edge.

Gloss (75°): Average each side not less than
(percent) (applies to all weights) 5 to 25

Smoothness: Average each side not to exceed
(Sheffield units) (applies to all weights) 150

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Brightness: Average not less than 79% or as specified.

Color: The paper in the order (or publication) shall be uniform and the color variation shall not exceed DE (CIELAB) = 1.0.

Formation: Coating shall be uniform; shall be uniformly applied; shall not be gritty, mottled, stippled, or ribbed in appearance, and shall not exhibit cracks or flake off.

Coating: This grade shall have at least 3 pounds of coating per side.

Cleanliness: The dirt count for each side of the paper shall not exceed 250 specks per square meter. No sample sheet (8½ x 11" in size) shall contain more than one defect with equivalent area of 0.25 mm² or greater.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. The "precision" requirements of the acceptance criteria in Part 4 shall apply.

JCP A235 — MATTE-COATED TEXT (PUBLICATION GRADE)

Text Paper — FSC 9310

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For face and back offset printing of books, pamphlets, folders, etc. Printed matter may include text, line illustrations and light halftones. Grade suited for long runs. A mill run grade.

Stock: No post-consumer fiber is required. Any percentage of post-consumer fiber is encouraged provided that the requirements of this Standard are met.

Basis weight: 25 by 38 inches, 500 sheets
(pounds) 40 50 60 70

A tolerance of $\pm 5\%$ shall be allowed.

Bursting strength: Average not less than
(lb/in²) 8 11 15 25

Opacity: Average not less than
(percent) 91 91 92 93

No individual specimen shall average less than
(percent) 89 89 90 91

Thickness: Average (mils) 3.3 3.7 4.3 5.4

A tolerance of ± 0.0005 inch shall be allowed. Paper shall be uniform and shall not vary more than 0.0004 inch from one edge to edge.

Gloss (75°): Average each side not less than
(percent) (applies to all weights) 10 to 25

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards* Part 2. The acceptance criteria in Part 4 shall apply.

Smoothness: Average each side not to exceed
(Sheffield units) (applies to all weights) 120

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Brightness: Average not less than 79% or as specified.

Color: The paper in the order (or publication) shall be uniform and the color variation shall not exceed DE (CIELAB) = 1.0.

Formation: Coating shall be uniform; shall be uniformly applied; shall not be gritty, mottled, stippled, or ribbed in appearance, and shall not exhibit cracks or flake off.

Cleanliness: The dirt count for each side of the paper shall not exceed 100 specks per square meter. No sample sheet (8½ x 11" in size) shall contain more than one defect with equivalent area of 0.25 mm² or greater.

JCP A240 — MATTE-COATED TEXT

Text Paper — FSC 9310

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For face and back offset printing of books, pamphlets, folders, etc. Printed matter may include text, line illustrations and light halftones. Grade suited for long runs. A mill run grade.

Stock: No post-consumer fiber is required. Any percentage of post-consumer fiber is encouraged provided that the requirements of this Standard are met.

Basis weight: 25 by 38 inches, 500 sheets
(pounds) 60 70 80 100
A tolerance of $\pm 5\%$ shall be allowed.

Acidity: Average pH value of coating not less than 6.5

Folding endurance: Average each direction not less than (MIT double fold) 15 20 20 20

Bursting strength: Average not less than
(lb/in²) 15 25 35 40

Opacity: Average not less than
(percent) 91 92 93 95

No individual specimen shall average less than
(percent) 89 90 91 93

Thickness: Average (mils) 3.7 4.3 4.9 5.5

A tolerance of ± 0.0005 inch shall be allowed. Paper shall be uniform and shall not vary more than 0.0004 inch from edge to edge.

Gloss (75°): Average each side not to exceed
(percent) (applies to all weights) 25

Smoothness: Average each side not to exceed
(Sheffield units) (applies to all weights) 120

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Brightness: Average not less than 92% or as specified.

Color: The paper in the order (or publication) shall be uniform and the color variation shall not exceed DE (CIELAB) = 1.0.

Formation: Coating shall be uniform; shall be uniformly applied; shall not be gritty, mottled, stippled, or ribbed in appearance, and shall not exhibit cracks or flake off.

Cleanliness: The dirt count for each side of the paper shall not exceed 100 specks per square meter. No sample sheet (8½ x 11" in size) shall contain more than one defect with equivalent area of 0.25 mm² or greater.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. The acceptance criteria in Part 4 shall apply except as noted above.

JCP A250 — UNCOATED LAID-FINISH TEXT; WHITE AND COLORS

Text Paper — FSC 9310

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For high quality multicolor face and back offset printing of pamphlets, brochures, invitations, programs, etc., requiring attractive appearance. Has a rough, soft finish with decorative chain marks running at right angles to laid lines. High bulk. Printed matter may include text, line illustrations and halftones up to 150-line screen.

Stock: Groundwood pulp not to exceed 1%.

Note: Not less than 30% post-consumer fiber. Any percent over 30 percentage points is encouraged, provided that the requirements of this Standard are met.

Basis weight: 25 by 38 inches, 500 sheets
(pounds) 60 70 80

A tolerance of ±5% shall be allowed.

Acidity: pH value shall average not less than 6.5 for white paper and 5.0 for colored paper.

Bursting strength: Average not less than
(lb/in²) 15 19 22

Opacity: Average not less than
(percent) 89 91 93

No individual specimen shall average less than
(percent) 87 89 91

Thickness: Average (mils) 6.0 6.5 7.4

A tolerance of ±0.0005 inch shall be allowed. Paper shall be uniform and shall not vary more than 0.0004 inch from edge to edge.

Chain marks: Shall run parallel to machine direction of the sheet and match the standard sample.

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Brightness: The white paper shall have a target brightness not less than 88% or as specified.

Color: The paper in the order (or publication) shall be uniform and the color variation shall not exceed DE (CIELAB) = 1.0. For colored stock, paper shall match one of the established color standards in Part 3 or match a color sample supplied by the ordering agency. Colors shall not fade or transfer (rub off) and shall appear even and uniform on the surface of the sheet. The sheet shall not be 2-sided.

Finish: Paper shall have a laid-finish.

Formation: Shall be uniform.

Cleanliness: The dirt count for each side of the paper shall not exceed 650 specks per square meter. No sample sheet (8½ x 11" in size) shall contain more than one defect with equivalent area of 0.25 mm² or greater.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. The acceptance criteria in Part 4 shall apply.

Color: For a tight color match, designate a "precision" match in the solicitation. If no designation is specified, the "regular" acceptance criteria will be applied in judging the acceptability of the color match between the standard and the supplied paper stock for hue, chroma, and saturation.

JCP A260 — SILK / DULL-COATED TEXT

Text Paper — FSC 9310

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For multicolor face and back offset printing of books, pamphlets, periodicals, brochures, etc. Low glare. Sometimes referred to as satin. Printed matter may include text, line illustrations and halftones up to 175-line screen.

Stock: Groundwood pulp not to exceed 1%.

Note: No post-consumer fiber is required. Any percentage of post-consumer fiber is encouraged provided that the requirements of this Standard are met.

Basis weight: 25 by 38 inches, 500 sheets
(pounds) 60 70 80

A tolerance of $\pm 5\%$ shall be allowed.

Acidity: Average pH value of the coating not less than 6.5

Bursting strength: Average not less than
(lb/in²) 15 25 35

Opacity: Average not less than
(percent) 88 90 91

No individual specimen shall average less than
(percent) 86 88 89

Thickness: Average (mils) 3.0 3.5 4.1

A tolerance of ± 0.0005 inch shall be allowed. Paper shall be uniform and shall not vary more than 0.0004 inch from one edge to edge.

Gloss (75°): Average each side
(percent) (applies to all weights) 25 to 50

Smoothness: Average each side not to exceed
(Sheffield units) (applies to all weights) 60

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Brightness: Average not less than 88% or as specified.

Color: The paper in the order (or publication) shall be uniform and the color variation shall not exceed DE (CIELAB) = 1.0

Formation: Coating shall be uniform; shall be uniformly applied; shall not be gritty, mottled, stippled, or ribbed in appearance; and shall not exhibit cracks or flake off.

Cleanliness: The dirt count for each side of the paper shall not exceed 100 specks per square meter. No sample sheet (8½ x 11" in size) shall contain more than one defect with equivalent area of 0.25 mm² or greater.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. The acceptance criteria in Part 4 shall apply except as noted above.

JCP A261 — NO. 1 SILK / DULL-COATED TEXT

Text Paper — FSC 9310

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For highest quality multicolor face and back offset printing of books, pamphlets, magazines, periodicals, brochures, etc. Low glare. Sometimes referred to as satin. Printed matter may include text, line illustrations and halftones up to 200-line screen.

Stock: Free from groundwood or unbleached wood pulp.

Note: No post-consumer fiber is required. Any percentage of post-consumer fiber is encouraged provided that the requirements of this Standard are met.

Basis weight: 25 by 38 inches, 500 sheets
(pounds) 70 80 100

A tolerance of $\pm 5\%$ shall be allowed.

Acidity: Average pH value of the coating not less than 6.5

Bursting strength: Average not less than
(lb/in²) 25 35 45

Opacity: Average not less than
(percent) 92 93 94

No individual specimen shall average less than
(percent) 90 91 92

Thickness: Average (mils) 3.5 4.1 4.7

A tolerance of ± 0.0005 inch shall be allowed. Paper shall be uniform and shall not vary more than 0.0004 inch from one edge to edge.

Gloss (75°): Average each side not to exceed
(percent) (applies to all weights) 30 to 50

Smoothness: Average each side not to exceed
(Sheffield units) (applies to all weights) 50

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Brightness: Average not less than 92% or as specified.

Color: The paper in the order (or publication) shall be uniform and the color variation shall not exceed DE (CIELAB) = 1.0.

Formation: Coating shall be uniform; shall be uniformly applied; shall not be gritty, mottled, stippled, or ribbed in appearance; and shall not exhibit cracks or flake off.

Cleanliness: The dirt count for each side of the paper shall not exceed 25 specks per square meter. No sample sheet (8½ x 11" in size) shall contain more than one defect with equivalent area of 0.25 mm² or greater.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. The acceptance criteria in Part 4 shall not apply.

JCP A262 — NO. 2 SILK / DULL COATED TEXT

Text Paper — FSC 9310

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For higher quality multicolor face and back offset printing of books, pamphlets, magazines, periodicals, brochures, etc. Low glare. Sometimes referred to as satin. Printed matter may include text, line illustrations and halftones up to 200-line screen.

Stock: Free from groundwood or unbleached wood pulp.

Note: No post-consumer fiber is required. The addition of post-consumer fiber is encouraged provided that the requirements of this Standard are met.

Basis weight: 25 by 38 inches, 500 sheets
(pounds) 70 80 100

A tolerance of $\pm 5\%$ shall be allowed.

Acidity: Average pH value of the coating not less than 6.5. Note: Any deviation from this requirement is sufficient cause for rejection of the paper.

Bursting strength: Average not less than
(lb/in²) 25 35 45

Opacity: Average not less than
(percent) 91 92 93

No individual specimen shall average less than
(percent) 89 90 91

Thickness: Average (mils) 3.5 4.1 4.7

A tolerance of ± 0.0005 inch shall be allowed. Paper shall be uniform and shall not vary more than 0.0004 inch from edge to edge.

Gloss (75°): Average each side
(percent) (applies to all weights) 25 to 45

Smoothness: Average each side not to exceed
(Sheffield units) (applies to all weights) 60

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Brightness: Average not less than 90% or as specified.

Color: The paper in the order (or publication) shall be uniform and the color variation shall not exceed DE (CIELAB) = 1.0.

Finish and Formation: Shall be uniform.

Cleanliness: The dirt count for each side of the paper shall not exceed 50 specks per square meter. No sample sheet (8½ x 11" in size) shall contain more than one defect with equivalent area of 0.25 mm² or greater.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. The acceptance criteria Part 4 shall not apply.

JCP A270 — UNCOATED-PERMANENT TEXT; WHITE AND CREAM WHITE

Text Paper — FSC 9310

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For face and back offset printing of books, pamphlets, etc. requiring the highest degree of permanence (archival quality.) Printed matter may include text, line illustrations and halftones up to 150-line screen.

Stock: 100% bleached chemical wood pulp.

Note: Any deviation from this requirement is sufficient cause for rejection of the paper.

Note: Not less than 30% post-consumer fiber. Any percent over 30 percentage points is encouraged, provided that the requirements of this Standard are met.

Basis weight: 25 by 38 inches, 500 sheets
(pounds) 30 40 50 60 70

A tolerance of ±5% shall be allowed.

Acidity: Average pH value by cold extraction shall average not less than 7.5. The composition of the filler shall include not less than 2.0% calcium carbonate.

Note: Any deviation from this requirement is sufficient cause for rejection of the paper.

Folding endurance: Average each side not less than
(MIT double folds) 30 30 30 30 35

Note: Any deviation from this requirement is sufficient cause for rejection of the paper.

Tearing strength: Average each direction not less
(grams) 25 33 40 50 60

Opacity: Average not less than
(percent) 84 86 89 91 92

No individual specimen shall average less than
(percent) 82 84 87 89 90

Thickness: Average (mils) 2.6 3.5 4.1 4.5 5.0

A tolerance of ±0.0003 inch shall be allowed for the 30 and 40 pound stocks and ±0.0005 inch for the 50, 60 and 70 pound. Paper shall be uniform and shall not vary more than 0.0004 inch from edge to edge.

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Brightness: The white paper shall average not less than 88% or as specified.

Color: The paper in the order (or publication) shall be uniform and the color variation shall not exceed DE (CIELAB) = 1.0.

Finish and Formation: Shall be uniform.

Cleanliness: The dirt count for each side of the paper shall not exceed 50 specks per square meter. No sample sheet (8½ x 11" in size) shall contain more than one defect with equivalent area of 0.25 mm² or greater.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. The acceptance criteria in Part 4 shall apply except as noted above.

JCP A280 — MATTE-COATED GROUNDWOOD TEXT

Text Paper — FSC 9310

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For higher quality multicolor face and back offset printing of books, pamphlets, magazines, periodicals, brochures, etc. Low glare. Printed matter may include text, line illustrations and halftones up to 200-line screen.

Stock: Not less than 10% post-consumer fiber. Any percent over 10 percentage points is encouraged, provided that the requirements of this Standard are met.

Basis weight: 25 by 38 inches, 500 sheets
(pounds) 35
A tolerance of $\pm 5\%$ shall be allowed.

Opacity: Average not less than (percent) 89
No individual specimen shall average less than (percent) 87

Thickness: Average (mils) 3.3
A tolerance of ± 0.0005 inch shall be allowed. Paper shall be uniform and shall not vary more than 0.0004 inch from edge to edge.

Gloss (75°): Average each side (percent) 10 to 25

Smoothness: Average each side not to exceed (Sheffield units) 120

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Brightness: Average not less than 77% or as specified.

Color: The paper in the order (or publication) shall be uniform and the color variation shall not exceed DE (CIELAB) = 1.0.

Formation: Coating shall be uniform; shall be uniformly applied; shall not be gritty, mottled, stippled, or ribbed in appearance; and shall not exhibit cracks or flake off.

Cleanliness: The dirt count for each side of the paper shall not exceed 50 specks per square meter. No sample sheet ($8\frac{1}{2}$ x 11" in size) shall contain more than one defect with equivalent area of 0.25 mm² or greater.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. The acceptance criteria Part 4 shall apply.

JCP D10 — WRITING; WHITE AND COLORS (WITH TABLET STOCK OPTION)

Writing Paper — FSC 7530

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For face and back offset printing. The 12-pound paper is used on open forms, including multiple copies, one side only. The 16-pound and heavier are used in printing books, pamphlets, catalog, open forms, etc. Printed matter may include text, line illustrations and ruled forms. Halftones and reverse prints may be included on the 20-pound paper.

Stock: Groundwood pulp not to exceed 1%.

Note: Post-consumer fiber in any percentage is encouraged provided that the requirements of this Standard are met.

Basis weight: 17 by 22 inches, 500 sheets
(pounds) 12 16 18 20

A tolerance of ±5% shall be allowed.

Folding endurance: Average each direction not less than (MIT double folds) 7 8 8 9

Opacity¹: Average not less than
(percent) na 83 84 85

No individual specimen shall average less than
(percent) na 81 82 83

Thickness: Average (mils) 2.4 3.0 3.4 3.8

A tolerance of ±0.0005 inch shall be allowed. Paper shall be uniform and shall not vary more than 0.0004 inch from edge to edge.

Writing quality: Characters written with ball point and felt tip pens shall be clear cut and free from excessive feathering.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. The acceptance criteria in Part 4 shall apply.

Color: For a tight color match, designate a “precision” match in the solicitation. If no designation is specified, the “regular” acceptance criteria will be applied in judging the acceptability of the color match between the standard and the supplied paper stock for hue, chroma, and saturation.

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Brightness: The white paper shall target not less than 79% or as specified.

Color²: The paper shall be uniform and the color variation shall not exceed DE(CIELAB) = 1.0. For colored stock, paper shall match one of the established color standards in Part 3 or match a color sample supplied by the ordering agency. Colors shall not fade or transfer (rub off) and shall appear even and uniform on the surface of the sheet. The sheet shall not be 2-sided.

Formation: Shall be uniform.

Cleanliness: The dirt count for each side of the paper shall not exceed 650 specks per square meter. No sample sheet (8½ x 11” in size) shall contain more than one defect with an equivalent area of 0.25 mm² or greater.

¹ This property is automatically waived if the end use is to produce “scratch” pads, tablets for 1-sided use and of a temporary nature, etc.

² Contact the GPO for availability of these colors: blue, buff, green, pink, salmon or yellow. Exact matches to these colors standards are available in mill run quantities.

JCP D11 — SMOOTH AND EMBOSSED WRITING; WHITE AND COLORS

Writing Paper — FSC 7530

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For higher quality multicolor face and back offset printing of stationery, letterheads, certificates, citations, diplomas, etc., requiring execution with pen and ink and suitable for processing in a laser printer. Printed matter may include text, line illustrations and ruled forms. Grade allows for unique finishes for special print requirements.

Stock¹: Groundwood pulp not to exceed 1%.

Note: Not less than 30% post-consumer fiber. Any percent over 30 percentage points is encouraged, provided that the requirements of this Standard are met.

Basis weight: 17 by 22 inches, 500 sheets
(pounds) 24 28

A tolerance of ±5% shall be allowed.

Folding endurance: Average each direction not less than (MIT double folds) 12 14

Opacity: Average not less than (percent) 89 90
No individual specimen shall average less than (percent) 87 88

Ruling and writing quality: Lines ruled and characters written with pen and ink shall be clear and free from excessive feathering.

Curl: Paper shall lie flat before and after processing through a high-speed copier or laser printer with either no tendency to curl or with a curl which can be overcome under reasonable working conditions.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. The acceptance criteria in Part 4 shall apply.

Color: For a tight color match, designate a “precision” match in the solicitation. If no designation is specified, the “regular” acceptance criteria will be applied in judging the acceptability of the color match between the standard and the supplied paper stock for hue, chroma, and saturation.

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Brightness: The white paper shall target not less than 90% or as specified.

Color: The paper shall be uniform and the color variation shall not exceed DE (CIELAB) = 1.0. For colored stock, paper shall match one of the established color standards in Part 3 or match a color sample supplied by the ordering agency. Colors shall not fade or transfer (rub off) and shall appear even and uniform on the surface of the sheet. The sheet shall not be 2-sided.

Finish: Paper shall have a smooth-finish or as specified (linen, leatherette, felt, etc.)

Formation: Shall be uniform.

Cleanliness: The dirt count for each side of the paper shall not exceed 650 specks per square meter. No sample sheet (8½ x 11” in size) shall contain more than one defect with an equivalent area of 0.25 mm² or greater.

¹ Alternatively, the ordering agency may specify a more environmentally-preferable paper by including specific language in the solicitation and/or adjusting the stock requirement for higher post-consumer fiber content or total recycled fiber content.

JCP D50 — 100% COTTON FINE WRITING

Writing Paper — FSC 7530

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For highest quality offset printing and embossing of stationery, letterheads, certificates, citations, diplomas, etc., requiring execution with pen and ink erasing quality, permanence and suitable for processing in a laser printer. The paper is restricted to printing of stationery for use by officials at the highest level of Government.

Stock: 100% cotton or linen fibers.

No fluorescent (optical) brighteners shall be added to the pulp or paper during manufacture. Fluorescence, due to residual white water, broke, or natural fibers, is permissible, provided the increase in reflectance measured with and without the ultraviolet component of a light source of 3100 Kelvin in combination with a C.I.E. (International Commission on Illumination) Z (blue) filter, does not exceed 2.0%

Note¹: Post-consumer recovered fiber in any percentage is encouraged, provided that the requirements of this Standard are met.

Basis weight: 17 by 22 inches, 500 sheets
(pounds) 24 28 32

A tolerance of ±5% shall be allowed.

Acidity: pH value shall average not less than 6.5

Bursting strength: Average not less than
(lb/in²) 40 47 50

Folding endurance: Average each direction not less than (MIT double folds) 10 12 15

Opacity: Average not less than
(percent) 88 89 91

No individual specimen shall average less than
(percent) 86 87 89

Writing quality: Characters written with pen and ink shall be clear and free from excessive feathering.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. The acceptance criteria in Part 4 shall apply.

Erasing quality: Paper shall retain good ruling, writing, and typing quality, texture and surface appearance without ink spreading after repeated erasures.

Curl: Paper shall lie flat before and after processing through a high-speed copier or laser printer with either no tendency to curl or with a curl which can be overcome under reasonable working conditions.

Watermark²: Shall be the seal of the United States, with four stars, on the basis of four times on a sheet 17 by 22 inches, one in each quarter. The watermark shall be clear and legible. When viewed from the felt side of the sheet, the design shall appear as illustrated in Part 3 (Style C or F.)

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Brightness: Shall target 81% or as specified.

Color: The paper in the order (or publication) shall be uniform and the color variation shall not exceed DE (CIELAB) = 1.0.

Finish and formation: Shall be uniform.

Cleanliness: The dirt count for each side of the paper shall not exceed 250 specks per square meter. No sample sheet (8½ x 11" in size) shall contain more than one defect with an equivalent area of 0.25 mm² or greater.

¹ This grade is 100% recycled with the cotton/linen fiber content. Unless the cotton/linen fibers used in the manufacture of the paper were recovered from an item used by the consumer, the cotton/linen fibers are not a post-consumer recovered fiber.

² Full size copy will be provided upon request. The selection of Style C or F watermark depends on the presence of post-consumer recovered fiber in the paper. The Government watermark may be waived at the discretion of the ordering agency.

JCP E10 – 50% MAP, LITHOGRAPHIC FINISH

Map Paper — FSC 9310

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For higher quality multicolor offset printing of maps, folded inserts, etc., requiring good folding endurance and permanence. Printed matter may include text, line illustrations and halftones up to 150-line screen. A mill run grade.

Stock¹: Not less than 50% cotton or linen fibers; the remainder bleached chemical wood pulp.

No fluorescent (optical) brighteners shall be added to the pulp or paper during manufacture. Fluorescence, due to residual white water, broke, or natural fibers, is permissible, provided the increase in reflectance, measured with and without the ultraviolet component of a light source of 3100 Kelvin in combination with a C.I.E. (International Commission on Illumination) Z (blue) filter, does not exceed 2.0%.

Note¹: Post-consumer recovered fiber in any percentage is encouraged, provided that the requirements of this Standard are met.

Basis weight: 17 by 22 inches, 500 sheets
(pounds) 16 20 28

A tolerance of $\pm 5\%$ shall be allowed.

Acidity: pH value shall average not less than 5.0

Folding endurance: Average each direction not less than (MIT double folds) (applies to all weights) 75

Thickness: Average (mils) 2.6 3.0 3.9

A tolerance of ± 0.0005 inch shall be allowed. Paper shall be uniform and shall not vary more than 0.0004 inch from edge to edge.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. The acceptance criteria in Part 4 shall apply.

Equilibrium relative humidity: Shall be 45% $\pm 5\%$ at 23°C $\pm 2^\circ$ C for the production of maps. As appropriate, request a certification from the supplier and/or prior-to-shipment of the paper test data showing that the paper meets this requirement.

Smoothness: Average each side not to exceed (Sheffield units) (applies to all weights) 100

Writing quality: Characters written with ball point and felt tip pen shall be clear and free from excessive feathering.

Erasing quality: Paper shall retain good ruling, writing, and typing quality, texture, and surface appearance without ink spreading after repeated erasures. After erasures and burnishing, texture shall permit re-drawing of sharp lines in ink.

Blocking: Sheets shall not stick together after being wet with water then allowed to dry in contact with other sheets of the same paper.

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Brightness: Shall target 80% or as specified.

Color: The paper in the order (or publication) shall be uniform and the color variation shall not exceed DE (CIELAB) = 1.0.

Formation: Shall be uniform.

Cleanliness: The dirt count for each side of the paper shall not exceed 100 specks per square meter. No sample sheet (8½ x 11" in size) shall contain more than one defect with an equivalent area of 0.25 mm² or greater.

¹ Unless the cotton/linen fibers used in the manufacture of this paper were recovered from an item used by the consumer, the cotton/linen fibers are not a post-consumer recovered fiber.

JCP E20 — HIGH-WET STRENGTH MAP, LITHOGRAPHIC FINISH

Map Paper — FSC 9310

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For higher quality multicolor offset printing of maps, folded inserts, etc. Has good folding endurance. Printed matter may include text, line illustrations and halftones up to 150-line screen. A mill run grade.

Stock: Groundwood pulp not to exceed 1%. The use of melamine-formaldehyde or any material that releases formaldehyde into the atmosphere at concentration of 0.1 ppm or greater shall not be permitted in the manufacture of this paper.

Note: Not less than 10% post-consumer fiber. Any percent over the 10 percentage points is encouraged, provided that the requirements of this Standard are met.

Basis weight: 17 by 22 inches, 500 sheets
(pounds) 20 24

Acidity: pH value by cold extraction shall average not less than 4.5

Wet Tensile Strength: Average not less than
(Machine direction, kg/in) 5.1 5.9
(Cross direction, kg/in) 3.4 4.1

Folding endurance: Average each direction not less than (MIT double folds) 300 700

Bursting strength: Average not less than-
(Dry lb/in²) 40 50
(Wet lb/in²) 18 21

Opacity: Average not less than (percent) 90 91
No individual specimen shall average less than (percent) 88 89

Thickness: Average (mils) 3.7 4.1

A tolerance of ±0.0005 inch shall be allowed. Paper shall be uniform and shall not vary more than 0.0004 inch from edge to edge.

Water resistance: Average not less than
(seconds) 35 40

Smoothness: Average each side not to exceed
(Sheffield units) 60 to 120

Writing quality: Characters written with ball point and felt tip pen shall be clear and free from excessive feathering.

Erasing quality: Paper shall retain good ruling, writing, and typing quality, texture, and surface appearance, without ink spreading after repeated erasures. After erasures and burnishing, texture shall permit re-drawing of sharp lines in ink.

Blocking: Sheets shall not stick together after being wet with water then allowed to dry in contact with other sheets of the same paper.

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Brightness: Shall target 79%.

Color: The paper in the order (or publication) shall be uniform and the color variation shall not exceed DE (CIELAB) = 1.0.

Formation: Shall be uniform.

Cleanliness: The dirt count for each side of the paper shall not exceed 100 specks per square meter. No sample sheet (8½ x 11" in size) shall contain more than one defect with an equivalent area of 0.25 mm² or greater.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. The acceptance criteria in Part 4 shall apply.

Equilibrium relative humidity: Shall be 45% ±5% at 23°C ±2°C for the production of maps. As appropriate, request a certification from the supplier and/or prior-to-shipment of the paper test data showing that the paper meets this requirement.

JCP E30 — OFFSET MAP, LITHOGRAPHIC FINISH

Map Paper — FSC 9310

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For high quality multicolor offset printing of maps, folded inserts, etc. Printed matter may include text, line illustrations and halftones up to 150-line screen. A mill run grade.

Stock: 100% bleached chemical wood pulp. The use of melamine-formaldehyde or any material that releases formaldehyde into the atmosphere at concentration of 0.1 ppm or greater shall not be permitted in the manufacture of this paper.

Note: Not less than 30% post-consumer fiber. Any percent over 30 percentage points is encouraged provided that the requirements of this Standard are met.

Basis weight: 25 by 38 inches, 500 sheets
(pounds) 40 50 60 70

A tolerance of $\pm 5\%$ shall be allowed.

Acidity: pH value by cold extraction shall average not less than 4.8

Folding endurance: Average each direction not less than (MIT double folds) 30 30 35 40

Tearing strength: Average each direction not less than (grams) 30 40 50 60

Opacity: Average not less than (percent) 88 89 91 92

No individual specimen shall average less than (percent) 86 87 89 90

Thickness: Average (mils) 3.0 3.5 4.1 4.9

A tolerance of ± 0.0005 inch shall be allowed. Paper shall be uniform and shall not vary more than 0.0004 inch from edge to edge.

Water resistance: Average not less than (seconds) 20 25 30 35

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. The "precision" requirements of the acceptance criteria in Part 4 shall apply.

Equilibrium relative humidity: Shall be 45% $\pm 5\%$ at 23°C $\pm 2^\circ\text{C}$ for the production of maps. As appropriate, request a certification from the supplier and/or prior-to-shipment of the paper test data showing that the paper meets this requirement.

Smoothness: Average each side not to exceed (Sheffield units) 80 to 140

Writing quality: Characters written with ball point and felt tip pen shall be clear and free from excessive feathering.

Erasing quality: Paper shall retain good ruling, writing, and typing quality, texture and surface appearance without ink spreading after repeated erasures. After erasures and burnishing, texture shall permit re-drawing of sharp lines in ink.

Blocking: Sheets shall not stick together after being wet with water then allowed to dry in contact with other sheets of the same paper.

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Brightness: Shall target not less than 82% or as specified.

Color: The paper in the order (or publication) shall be uniform and the color variation shall not exceed DE (CIELAB) = 1.0.

Formation: Shall be uniform.

Cleanliness: The dirt count for each side of the paper shall not exceed 100 specks per square meter. No sample sheet (8½ x 11" in size) shall contain more than one defect with an equivalent area of 0.25 mm² or greater.

JCP E40 — CHEMICAL WOOD MAP, LITHOGRAPHIC FINISH

Map Paper — FSC 9310

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For high quality multicolor offset printing of maps, folded inserts, etc., and requiring good folding endurance. Printed matter may include text, line illustrations and halftones up to 150-line screen. A mill run grade.

Stock: 100% bleached chemical wood pulp. The use of melamine-formaldehyde or any material that releases formaldehyde into the atmosphere at concentration of 0.1 ppm or greater shall not be permitted in the manufacture of this paper.

Note: Not less than 20% post-consumer fiber. Any percent over 20 percentage points is encouraged provided that the requirements of this Standard are met.

Basis weight: 17 by 22 inches, 500 sheets
(pounds) 20 22

A tolerance of $\pm 5\%$ shall be allowed.

Acidity: pH value by cold extraction shall average not less than 4.8

Wet Tensile Strength: Average not less than
(Machine direction, kg/in) 1.4 1.8
(Cross direction, kg/in) 0.6 0.9

Folding endurance: Average each direction not less than (MIT double folds) 150 175

Bursting strength: Average not less than
(Dry lb/in²) 30 33
(Wet lb/in²) 3.0 3.3

Opacity: Average not less than (percent) 90 91
No individual specimen shall average less than (percent) 88 89

Thickness: Average (mils) 3.7 4.1

A tolerance of ± 0.0005 inch shall be allowed. Paper shall be uniform and shall not vary more than 0.0004 inch from edge to edge.

Water resistance: Average not less than
(seconds) 25 30

Smoothness: Average each side not to exceed
(Sheffield units) 60 to 120

Writing quality: Characters written with ball point and felt tip pen shall be clear and free from excessive feathering.

Erasing quality: Paper shall retain good ruling, writing, and typing quality, texture, and surface appearance, without ink spreading after repeated erasures. After erasures and burnishing, texture shall permit re-drawing of sharp lines in ink.

Blocking: Sheets shall not stick together after being wet with water then allowed to dry in contact with other sheets of the same paper.

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Brightness: Shall target not less than 81%.

Color: The paper in the order (or publication) shall be uniform and the color variation shall not exceed DE (CIELAB) = 1.0.

Formation: Shall be uniform.

Cleanliness: The dirt count for each side of the paper shall not exceed 100 specks per square meter. No sample sheet (8½ x 11" in size) shall contain more than one defect with an equivalent area of 0.25 mm² or greater.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. The "precision" requirements of the acceptance criteria in Part 4 shall apply.

Equilibrium relative humidity: Shall be 45% $\pm 5\%$ at 23°C $\pm 2^\circ$ C for the production of maps. As appropriate, request a certification from the supplier and/or prior-to-shipment of the paper test data showing that the paper meets this requirement.

JCP E50 — 50% CHART, LITHOGRAPHIC FINISH

Map Paper — FSC 9310

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For high quality multicolor offset printing of maps, folded inserts, etc., and requiring good folding endurance. Printed matter may include text, line illustrations and halftones up to 150-line screen. A mill run grade.

Stock: Not less than 50% cotton or linen; the remainder bleached chemical wood pulp. No fluorescent (optical) brighteners shall be added to the pulp or paper during manufacture. Fluorescence, due to residual white water, broke, or natural fibers, is permissible, provided the increase in reflectance measured with and without the ultraviolet component of a light source of 3100 Kelvin in combination with a C.I.E. (International Commission on Illumination) Z (blue) filter, does not exceed 2.0%.

Note¹: Post-consumer recovered fiber in any percentage is encouraged, provided that the requirements of this Standard are met.

Basis weight: 17 by 22 inches, 500 sheets
(pounds) 36

A tolerance of $\pm 5\%$ shall be allowed.

Acidity: pH value by cold extraction shall average not less than 5.0

Folding endurance: Average each direction not less than (MIT double folds) 300

Thickness: Average (mils) 5.3

A tolerance of ± 0.0005 inch shall be allowed. Paper shall be uniform and shall not vary more than 0.0004 inch from edge to edge.

Smoothness: Average each side not to exceed (Sheffield units) 60 to 120

Writing quality: Characters written with ball point and felt tip pen shall be clear and free from excessive feathering.

Erasing quality: Paper shall retain good ruling, writing, and typing quality, texture and surface appearance without ink spreading after repeated erasures. After erasures and burnishing, texture shall permit re-drawing of sharp lines in ink.

Blocking: Sheets shall not stick together after being wet with water then allowed to dry in contact with other sheets of the same paper.

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Brightness: Shall target 80%.

Color: The paper in the order (or publication) shall be uniform and the color variation shall not exceed DE (CIELAB) = 1.0.

Formation: Shall be uniform.

Cleanliness: The dirt count for each side of the paper shall not exceed 100 specks per square meter. No sample sheet (8½ x 11" in size) shall contain more than one defect with an equivalent area of 0.25 mm² or greater.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. The "precision" requirements of the acceptance criteria in Part 4 shall apply.

Equilibrium relative humidity: Shall be 45% $\pm 5\%$ at 23°C $\pm 2^\circ\text{C}$ for the production of maps. As appropriate, request a certification from the supplier and/or prior-to-shipment of the paper test data showing that the paper meets this requirement.

¹ Unless the cotton/linen fibers used in the manufacture of this paper were recovered from an item used by the consumer, the cotton/linen fibers are not a post-consumer recovered fiber.

JCP G05 — CHEMICAL WOOD FORMS BOND; WHITE AND COLORS

Bond Paper — FSC 7530

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For face only offset and flexographic printing or marginally punched continuous open forms, including multiple copies principally on web-type presses. Printed matter may include ruled forms with text, line illustrations and continuous tones. Slitting and pasting are included in press capabilities. End use of the paper is generally on impact-type computer printers, mechanical bursters and decollators.

Stock: Groundwood pulp not to exceed 1%.

Note: Not less than 30% post-consumer fiber. Any percent over 30 percentage points is encouraged, provided that the requirements of this Standard are met.

Basis weight: 17 by 22 inches, 500 sheets
(pounds) 9/10 11/12/13 15/16 18 20

A tolerance of $\pm 5\%$ shall be allowed.

Bursting strength: Average not less than
(lb/in²) 6 8 9 12 15

Pick resistance: Average each side not less than 10-A
Dennison wax number. No individual specimen shall
average less than 8-A.

Opacity: Average not less than
(percent) 78 79 80 81 82

No individual specimen shall average less than
(percent) 76 77 78 79 80

Thickness: Average
(mils) 2.4 2.6 3.0 3.3 3.7

A tolerance of ± 0.0005 inch shall be allowed. Paper shall be uniform and shall not vary more than 0.0004 inch from edge to edge.

Ruling and writing quality: Lines ruled and characters written with ball point and felt tip pens shall be clear and free from excessive feathering.

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Brightness: The white paper shall target not less than 84% or as specified.

Color: The paper in the order (or publication) shall be uniform and the color variation shall not exceed DE (CIELAB) = 1.0.

For colored stock, paper shall match one of the established color standards in Part 3 or match a color sample supplied by the ordering agency. Colors shall not fade or transfer (rub off) and shall appear even and uniform on the surface of the sheet. The sheet shall not be 2-sided.

Finish and formation: Shall be uniform.

Cleanliness: The dirt count for each side of the paper shall not exceed 650 specks per square meter. No sample sheet (8½ x 11" in size) shall contain more than one defect with an equivalent area of 0.25 mm² or greater.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. The acceptance criteria in Part 4 shall apply.

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For face and back offset printing of stationery, circulars, open forms, etc., requiring execution with pen and ink, erasing quality, and suitable for processing in a laser printer. Printed matter may include text and line illustrations.

Stock: Groundwood pulp not to exceed 1%.

Note: Not less than 30% post-consumer fiber. Any percent over 30 percentage points is encouraged, provided that the requirements of this Standard are met.

Basis weight: 17 by 22 inches, 500 sheets
 (pounds) 20 24 28 32

A tolerance of $\pm 5\%$ shall be allowed.

Acidity: pH value shall average not less than 6.5

Folding endurance: Average each direction
 Not less than
 (MIT double folds) 30 35 38 42

Opacity: Average not less than (percent)
 84 85 88 90

No individual specimen shall be average less than
 (percent) 82 83 86 88

Thickness: Average (mils) 3.7 4.5 5.0 5.4

A tolerance of ± 0.0005 inch shall be allowed. Paper shall be uniform and shall not vary more than 0.0004 inch from edge to edge.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. The acceptance criteria in Part 4 shall apply.

Ruling and writing quality: Lines ruled and characters written with ball point and felt tip pens shall be clear and free from excessive feathering.

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Brightness: Shall target not less than 88% or as specified.

Color: The paper in the order (or publication) shall be uniform and the color variation shall not exceed DE (CIELAB) = 1.0.

Finish and formation: Shall be uniform.

Cleanliness: The dirt count for each side of the paper shall not exceed 650 specks per square meter. No sample sheet (8½ x 11" in size) shall contain more than one defect with an equivalent area of 0.25 mm² or greater.

JCP G15 — 50% RECYCLED BOND; WHITE AND COLORS

Bond Paper — FSC 7530

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For face only offset and flexographic printing or marginally punched continuous open forms, including multiple copies principally on web-type presses. Printed matter may include ruled forms with text, line illustrations and continuous tones. Slitting and pasting are included in press capabilities. End use of the paper is generally on impact-type computer printers, mechanical bursters and decollators.

Stock: 100% chemical pulp.

Note: Not less than 50% total recovered fiber of which 30 percentage points shall be post-consumer fiber. Recovered fiber in any percent over 50 percentage points is encouraged, provided that the requirements of this Standard are met.

Basis weight: 17 by 22 inches, 500 sheets
(pounds) 10 12 15 18 20

A tolerance of ±5% shall be allowed.

Bursting strength: Average not less than
(lb/in²) 6 8 9 12 15

Pick resistance: Average each side not less than 10-A
Dennison wax number. No individual specimen shall
average less than 8-A.

Opacity: Average not less than
(percent) 80 81 81 82 84

No individual specimen shall average less than
(percent) 78 79 79 80 82

Thickness: Average
(mils) 2.4 2.8 3.2 3.6 4.0

A tolerance of ±0.0005 inch shall be allowed. Paper shall be uniform and shall not vary more than 0.0004 inch from edge to edge.

Ruling and writing quality: Lines ruled and characters written with ball point and felt tip pens shall be clear and free from excessive feathering.

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Brightness: The white paper shall target not less than 84% or as specified. The natural shade shall target not less than 59% or as specified.

Color: The paper in the order (or publication) shall be uniform and the color variation shall not exceed DE (CIELAB) = 1.0.

For colored stock, paper shall match one of the established color standards in Part 3 or match a color sample supplied by the ordering agency. Colors shall not fade or transfer (rub off) and shall appear even and uniform on the surface of the sheet. The sheet shall not be 2-sided.

Finish and formation: Shall be uniform.

Cleanliness: The dirt count for each side of the paper shall not exceed 650 specks per square meter. No sample sheet (8½ x 11" in size) shall contain more than one defect with an equivalent area of 0.25 mm² or greater.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards* Part 2. The acceptance criteria in Part 4 shall apply.

JCP G40 — 25% COTTON BOND; WHITE AND COLORS; ARCHIVAL QUALITY

Bond Paper — FSC 7530

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For high quality offset printing. Suitable for face and back offset printing, processing through high speed copiers and laser printers, requiring execution with pen and ink, erasing quality and permanence (archival quality). Opacity of white paper is not a specified property and therefore, subject to variation. Printed matter may include text and light line illustrations.

Stock: Not less than 25% cotton or linen fibers; the remainder bleached chemical wood pulp.

Note¹: Not less than 30% post-consumer fiber. Any percent over 30 percentage points is encouraged, provided that the requirements of this Standard are met.

Basis weight: 17 by 22 inches, 500 sheets
(pounds) 16 20 24

A tolerance of ±5% shall be allowed.

Acidity: pH value by cold extraction shall average not less than 7.5. The paper shall contain not less than 2% calcium carbonate.

Note: Any deviation in this requirement is sufficient cause for rejection of the paper.

Folding endurance: Average not less than
(MIT double folds) 70 75 80

Tearing Strength: Average each direction not less than
(grams) 33 40 45

Ruling and writing quality: Lines ruled and characters written with ball point and felt tip pens shall be clear and free from excessive feathering.

Erasing quality: Paper shall retain good ruling, writing, and typing quality, texture, and surface appearance, without ink spreading after repeated erasure.

Watermark²: Shall be the seal of the United State, with one star on the basis of four times on a sheet 17 by 22 inches, one in each quarter. The watermark shall be clear and legible. When viewed from the felt side of the sheet, the design shall appear as illustrated in Part 3 (Style D.)

Curl: Paper shall lie flat before and after processing through a high speed copier or laser printer with either no tendency to curl or with a curl which can be overcome under reasonable working conditions.

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Brightness: The white paper shall target not less than 88% or as specified.

Color: The paper in the order (or publication) shall be uniform and the color variation shall not exceed DE (CIELAB) = 1.0.

For colored stock, paper shall match one of the established color standards in Part 3 or match a color sample supplied by the ordering agency. Colors shall not fade or transfer (rub off) and shall appear even and uniform on the surface of the sheet. The sheet shall not be 2-sided.

Finish and formation: Shall be uniform.

Cleanliness: The dirt count for each side of the paper shall not exceed 250 specks per square meter. No sample sheet (8½ x 11" in size) shall contain more than one defect with equivalent area of 0.25mm² or greater.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. The "precision" requirements of the acceptance criteria in Part 4 shall apply except as noted above.

¹ Unless the cotton/linen fibers used in the manufacture of the paper were recovered from an item used by the consumer, the cotton/linen fibers are not a post-consumer recovered fiber.

² Full size copy will be provided upon request. This grade with the Government watermark is typically not available in less than mill run quantities. The Government watermark may be waived at the discretion of the ordering agency.

JCP G45 — 25% COTTON BOND; WHITE AND COLORS; 50% RECYCLED

Bond Paper — FSC 7530

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For high quality offset printing. Suitable for processing through high speed copiers and laser printers, requiring execution with pen and ink and erasing quality. Opacity of white paper is not a specified property and therefore, subject to variation. Printed matter may include text and light line illustrations.

Stock: Not less than 25% cotton or linen fibers. Groundwood pulp not to exceed 1%. The remainder is chemical pulp.

Note¹: Not less than 50% total recovered fiber of which 30 percentage points shall be post-consumer fiber. Post-consumer fiber, in any percent over 30 percentage points is encouraged provided that the requirements of this Standard are met.

Basis weight: 17 by 22 inches, 500 sheets
(pounds) 16 20 24

A tolerance of ±5% shall be allowed.

Acidity: pH value shall average not less than 6.5

Folding endurance: Average not less than
(MIT double folds) 14 18 25

Smoothness: Average each side not to exceed
(Sheffield units) (applies to all weights) 240

Note: Any deviation in this requirement is sufficient cause for rejection of the paper.

Ruling and writing quality: Lines ruled and characters written with ball point and felt tip pens shall be clear and free from excessive feathering.

Erasing quality: Paper shall retain good ruling, writing, and typing quality, texture, and surface appearance, without ink spreading after repeated erasure.

Watermark²: Shall be the seal of the United State, with one star on the basis of four times on a sheet 17 by 22 inches, one in each quarter. The watermark shall be clear and legible. When viewed from the felt side of the sheet, the design shall appear as illustrated in Part 3 (Style D.)

Curl: Paper shall lie flat before and after processing through a high speed copier or laser printer with either no tendency to curl or with a curl which can be overcome under reasonable working conditions.

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Brightness: The white paper shall target not less than 88% or as specified.

Color: The paper in the order (or publication) shall be uniform and the color variation shall not exceed DE (CIELAB) = 1.0.

For colored stock, paper shall match one of the established color standards in Part 3 or match a color sample supplied by the ordering agency. Colors shall not fade or transfer (rub off) and shall appear even and uniform on the surface of the sheet. The sheet shall not be 2-sided.

Finish and formation: Shall be uniform.

Cleanliness: The dirt count for each side of the paper shall not exceed 650 specks per square meter. No sample sheet (8½ x 11" in size) shall contain more than one defect with equivalent area of 0.25mm² or greater.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. The "precision" requirements of the acceptance criteria in Part 4 shall apply except as noted above.

¹ Unless the cotton/linen fibers used in the manufacture of the paper were recovered from an item used by the consumer, the cotton/linen fibers are not a post-consumer recovered fiber.

² Full size copy will be provided upon request. This grade with the Government watermark is typically not available in less than mill run quantities. The Government watermark may be waived at the discretion of the ordering agency.

JCP G50 — 25% COTTON TRANSLUCENT BOND

Bond Paper — FSC 7530

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For offset printing, generally face only on open master forms which may be for duplicating in the ammonia process of reproduction. Printed matter may include text and line illustrations.

Stock: Not less than 25% cotton or linen fibers.
Groundwood pulp not to exceed 1%.

Note¹: Post-consumer fiber in any percentage is encouraged provided that the requirements of this Standard are met.

Basis weight: 17 by 22 inches, 500 sheets
(pounds) 16

A tolerance of $\pm 5\%$ shall be allowed.

Acidity: pH value shall average not less than 5.0

Folding endurance: Average not less than
(MIT double folds) 75

Opacity: Average not to exceed (percent) 70

Note: this paper should freely transmit ultra-violet light in near visible portions of the spectrum. It should retain its ultra-violet light transparency with age, remaining free from that degree of discoloration which would materially reduce transparency. If treated to aid transparency, the materials used shall not cause bleeding or feathering of the image nor offsetting in the files.

Ruling and writing quality: Lines ruled and characters written with ball point and felt tip pens shall be clear and free from excessive feathering.

Erasing quality: Paper shall retain good ruling, writing, typing quality, texture, and surface appearance, without ink spreading after repeated erasure.

Curl: Paper shall lie flat before and after processing through a high speed copier or laser printers with either no tendency to curl or with a curl which can be overcome under reasonable working conditions.

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Brightness: Shall target not less than 80% or as specified.

Color: The paper in the order (or publication) shall be uniform and the color variation shall not exceed DE (CIELAB) = 1.0.

Finish and formation: Shall be uniform.

Cleanliness: The dirt count for each side of the paper shall not exceed 250 specks per square meter. No sample sheet (8½ x 11" in size) shall contain more than one defect with equivalent area of 0.25mm² or greater.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. The "precision" requirements of the acceptance criteria in Part 4 shall apply.

¹ This is specialty grade and available in limited quantities with low Government usage. post-consumer fiber content for this grade is not practical for cost and technological reasons.

JCP G60 — 25% COTTON OPACIFIED BOND; ARCHIVAL QUALITY

Bond Paper — FSC 7530

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For high quality face and back offset printing of stationery, open forms, etc. Suitable for processing through high speed copiers and laser printers with imaging on both face and back, requiring execution with pen and ink, erasing quality, permanence (archival quality) and greater opacity than obtainable in Standard JCP G40 or G45. Printed matter may include text and line illustrations.

Stock: Not less than 25% cotton or linen fibers; the remainder bleached chemical wood pulp.

Note¹: Not less than 30% post-consumer fiber. Any percent over 30 percentage points is encouraged, provided that the requirements of this Standard are met.

Basis weight: 17 by 22 inches, 500 sheets
(pounds) 20 24

A tolerance of ±5% shall be allowed.

Acidity: pH value by cold extraction shall average not less than 7.5. The paper shall contain not less than 2% calcium carbonate.

Note: Any deviation in this requirement is sufficient cause for rejection of the paper.

Folding endurance: Average not less than
(MIT double folds) 75 80

Tearing strength: Average each direction not less than
(grams) 40 45

Opacity: Average not less than (percent) 88 90

No individual specimen shall average less than
(percent) 86 88

Ruling and writing quality: Lines ruled and characters written with ball point and felt tip pens shall be clear and free from excessive feathering.

Erasing quality: Paper shall retain good ruling, writing, and typing quality, texture, and surface appearance, without ink spreading after repeated erasure.

Watermark²: Shall be seal of the United States, with one star on the basis of four times on a sheet 17 by 22 inches, one in each quarter. The watermark shall be clear and legible. When viewed from the felt side of the sheet, the design shall appear as illustrated in Part 3 (style D.)

Curl: Paper shall lie flat before and after processing through a high speed copier or laser printer with either no tendency to curl or with a curl which can be overcome under reasonable working conditions.

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Brightness: Shall target not less than 85% or as specified.

Color: The paper in the order (or publication) shall be uniform and the color variation shall not exceed DE (CIELAB) = 1.0.

Finish and formation: Shall be uniform.

Cleanliness: The dirt count for each side of the paper shall not exceed 250 specks per square meter. No sample sheet (8½ x 11" in size) shall contain more than one defect with equivalent area of 0.25mm² or greater.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. The "precision" requirements of the acceptance criteria in Part 4 shall apply except as noted above.

¹ Unless the cotton/linen fibers used in the manufacture of the paper were recovered from an item used by the consumer, the cotton/linen fibers are not a post-consumer recovered fiber.

² Full size copy will be provided upon request. This grade with the Government watermark is typically not available in less than mill run quantities. The Government watermark may be waived at the discretion of the ordering agency.

JCP G65 — 25% COTTON OPACIFIED BOND; WHITE AND COLORS; 50% RECYCLED

Bond Paper — FSC 7530

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For higher quality face and back offset printing of stationery, open forms, etc. Suitable for processing through high speed copiers and laser printers with imaging on both face and back, requiring execution with pen and ink, erasing quality, and average permanence. Has a greater opacity than Standards JCP G40 or G45. Printed matter may include text and line illustrations.

Stock: Not less than 25% cotton or linen fibers. Groundwood pulp not to exceed 1%; the remainder bleached chemical pulp

Note¹: Not less than 50% total recovered fiber of which 30 percentage points shall be post-consumer fiber. Post-consumer fiber in any percent over 30 percentage points is encouraged provided that the requirements of this Standard are met.

Basis weight: 17 by 22 inches, 500 sheets
(pounds) 20 24

A tolerance of ±5% shall be allowed.

Acidity: pH value by cold extraction shall average not less than 7.0

Folding endurance: Average not less than
(MIT double folds) 18 20

Tearing strength: Average each direction not less than
(grams) 40 45

Opacity: Average not to exceed (percent) 88 90
No individual specimen shall average less than
(percent) 86 88

Smoothness: Average each side not to exceed
(Sheffield units) (applies to all weights) 270

Note: Any deviation in this requirement is sufficient cause for rejection of the paper.

Ruling and writing quality: Lines ruled and characters written with ball point and felt tip pens shall be clear and free from excessive feathering.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. The acceptance criteria in Part 4 shall apply except as noted above.

Erasing quality: Paper shall retain good ruling, writing, typing quality, texture, and surface appearance without ink spreading after repeated erasure.

Watermark²: Shall be seal of the United States, with one star on the basis of four times on a sheet 17 x 22", one in each quarter. The watermark shall be clear and legible. When viewed from the felt side of the sheet, the design shall appear as illustrated in Part 3 (style D.)

Curl: Paper shall lie flat before and after processing through a high speed copier or laser printer with either no tendency to curl or with a curl which can be overcome under reasonable working conditions.

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Brightness: The white paper shall have a target brightness not less than 88% or as specified.

Color: The paper in the order (or publication) shall be uniform and the color variation shall not exceed DE (CIELAB) = 1.0.

For colored stock, paper shall match one of the established color standards in Part 3 or match a color sample supplied by the ordering agency. Colors shall not fade or transfer (rub off) and shall appear even and uniform on the surface of the sheet. The sheet shall not be 2-sided.

Finish and formation: Shall be uniform.

Cleanliness: The dirt count for each side of the paper shall not exceed 650 specks per square meter. No sample sheet (8½ x 11" in size) shall contain more than one defect with equivalent area of 0.25mm² or greater.

¹ Unless the cotton/linen fibers used in the manufacture of this paper were recovered from an item used by the consumer, the cotton/linen fibers are not a post-consumer recovered fiber.

² Full size copy will be provided upon request. This grade with the Government watermark is typically not available in less than mill run quantities. The Government watermark may be waived at the discretion of the ordering agency.

JCP G70 — 50% COTTON BOND

Bond Paper — FSC 7530

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For high quality offset printing of stationery for use by officials at the higher levels of Government, requiring execution with pen and ink, erasing quality, above average permanence and suitable for processing in laser printers. Printed matter may include text and line illustrations.

Stock: Not less than 50% cotton or linen fibers. Groundwood pulp not to exceed 1%.

No fluorescent (optical) brighteners shall be added to the pulp or paper during manufacture. Fluorescence, due to residual white water, broke, or natural fibers, is permissible, provided the increase in reflectance measured with and without the ultraviolet component of a light source of 3100 Kelvin in combination with a C.I.E. (International Commission of Illumination) Z (blue) filter, does not exceed 2.0%.

Note¹: Not less than 50% total recovered fiber of which 30 percentage points shall be post-consumer fiber. Any percent over 30 percentage points is encouraged, provided that the requirements of this Standard are met.

Basis weight: 17 by 22 inches, 500 sheets
(pounds) 16 20 24

A tolerance of ±5% shall be allowed.

Folding endurance: Average not less than
(MIT double folds) 60 75 85

Smoothness: Average each side not exceed
(Sheffield units) 370 370 370

Note: Any deviation in this requirement is sufficient cause for rejection of the paper.

Ruling and writing quality: Lines ruled and characters written with ball point and felt tip pens shall be clear and free from excessive feathering.

Erasing quality: Paper shall retain good ruling, writing, and typing quality, texture, and surface appearance, without ink spreading after repeated erasure.

Watermark²: Shall be the seal of the United States, with two stars on the basis of four times on a sheet 17 by 22 inches, one in each quarter. The watermark shall be clear and legible. When viewed from the felt side of the sheet, the design shall appear as illustrated in Part 3 (Style E.)

Curl: Paper shall lie flat before and after processing through a high speed copier or laser printer with either no tendency to curl or with a curl which can be overcome under reasonable working conditions.

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Brightness: Shall target 88% or as specified.

Color: The paper in the order (or publication) shall be uniform and the color variation shall not exceed DE (CIELAB) = 1.0.

Formation: Shall be uniform.

Cleanliness: The dirt count for each side of the paper shall not exceed 250 specks per square meter. No sample sheet (8½ x 11" in size) shall contain more than one defect with equivalent area of 0.25 mm² or greater.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. The acceptance criteria in Part 4 shall apply except as noted above.

¹ Unless the cotton/linen fibers used in the manufacture of the paper were recovered from an item used by the consumer, the cotton/linen fibers are not a post-consumer recovered fiber.

² Full size copy will be provided upon request. This grade with the Government watermark is typically not available in less than mill run quantities. The Government watermark may be waived at the discretion of the ordering agency.

JCP G80 — 100% COTTON BOND

Bond Paper — FSC 7530

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For highest quality offset printing and embossing of stationery used by officials at the highest level of Government, requiring execution with pen and ink, erasing quality, permanence and suitable for processing in laser printers. Printed matter may include text and line illustrations.

Stock: 100% cotton or linen fibers.

No fluorescent (optical) brighteners shall be added to the pulp or paper during manufacture. Fluorescence due to residual white water, broke, or natural fibers is permissible, provided the increase in reflectance measured with and without the ultraviolet component of a light source of 3100 Kelvin in combination with a C.I.E. (International Commission of Illumination) Z (blue) filter, does not exceed 2.0%.

Note¹: Post-consumer recovered fiber in any percentage is encouraged, provided that the requirements of this Standard are met.

Note: This grade is 100% recycled with the 100% cotton/linen fiber content.

Basis weight: 17 by 22 inches, 500 sheets
(pounds) 20 24

A tolerance of ±5% shall be allowed.

Acidity: pH value average not less than 6.5

Folding endurance: Average not less than
(MIT double folds) 400 400

Ruling and writing quality: Lines ruled and characters written with ball point and felt tip pens shall be clear and free from excessive feathering.

Erasing quality: Paper shall retain good ruling, writing, typing quality, texture, and surface appearance without ink spreading after repeated erasure.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. The acceptance criteria in Part 4 shall apply.

Watermark²: Shall be the seal of the United States, with four stars on the basis of four times on a sheet 17 by 22 inches, one in each quarter. The watermark shall be clear and legible. When viewed from the felt side of the sheet, the design shall appear as illustrated in Part 3 (Style C or F.)

Curl: Paper shall lie flat before and after processing through a high speed copier or laser printer with either no tendency to curl or with a curl which can be overcome under reasonable working conditions.

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Brightness: Shall target 88% or as specified.

Color: The paper in the order (or publication) shall be uniform and the color variation shall not exceed DE (CIELAB) = 1.0.

Finish and formation: Shall be uniform.

Cleanliness: The dirt count for each side of the paper shall not exceed 250 specks per square meter. No sample sheet (8½ x 11" in size) shall contain more than one defect with equivalent area of 0.25 mm² or greater.

¹ Unless the cotton/linen fibers in this paper were recovered from an item used by the consumer, the cotton/linen fibers are not a post-consumer recovered fiber.

² Full size copy will be provided upon request. The selection of Style C or F watermark depends on the presence of post-consumer recovered fiber in the paper. This grade with the Government watermark is typically not available in less than mill run quantities. The Government watermark may be waived at the discretion of the ordering agency.

JCP H10 — 100% COTTON PARCHMENT

Parchment Paper — **FSC 9310**

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For highest quality offset printing of certificates, citations, diplomas, etc., requiring execution with pen and ink, erasing quality, permanence and suitable for processing in laser printers. Printed matter may include text and line illustrations. A mill run grade.

Stock: 100% cotton or linen fibers.

No fluorescent (optical) brighteners shall be added to the pulp or paper during manufacture. Fluorescence, due to residual white water, broke, or natural fibers, is permissible; provided the increase in reflectance, measured with and without the ultraviolet component of a light source of 3100 Kelvin in combination with a C.I.E. (International Commission on Illumination) Z (blue) filter, does not exceed 2.0%.

Note¹: Post-consumer fiber in any percentage is encouraged, provided that the requirements of this Standard are met.

Basis weight: 17 by 22 inches, 500 sheets
(pounds) 32

A tolerance of ±5% shall be allowed.

Acidity: pH value by cold extraction shall average not less than 6.5

Folding endurance: Average not less than
(MIT double folds) 400

Ruling and writing quality: Lines ruled and characters written with ball point and felt tip pens shall be clear and free from excessive feathering.

Watermark: Paper shall not be watermarked.

Erasing quality: Paper shall retain good ruling, writing, and typing quality, texture, and surface appearance, without ink spreading after repeated erasure.

Curl: Paper shall lie flat before and after processing through a high speed copier or laser printer with either no tendency to curl or with a curl which can be overcome under reasonable working conditions.

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Brightness: Shall target not less than 80% or as specified.

Color: The paper in the order (or publication) shall be uniform and the color variation shall not exceed DE (CIELAB) = 1.0.

Finish: Paper shall have a cockle finish.

Formation: Shall be uniform with a parchment appearance.

Cleanliness: The dirt count for each side of the paper shall not exceed 250 specks per square meter. No sample sheet (8½ x 11" in size) shall contain more than one defect with equivalent area of 0.25mm² or greater.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. The acceptance criteria in Part 4 shall apply.

¹ This grade is 100% cotton/linen fiber content. Unless the cotton/linen fibers in this paper were recovered from an item used by the consumer, the cotton/linen fibers are not a post-consumer fiber.

JCP H20 — 100% COTTON PARCHMENT; CREAM WHITE

Parchment Paper — FSC 9310

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For highest quality offset printing of certificates, citations, diplomas, etc., requiring execution with pen and ink, erasing quality, permanence and suitable for processing in laser printers. Printed matter may include text and line illustrations. Must be suitable for embossing. A mill run grade.

Stock: 100% cotton or linen fibers.

No fluorescent (optical) brighteners shall be added to the pulp or paper during manufacture. Fluorescence, due to residual white water, broke, or natural fibers, is permissible; provided the increase in reflectance, measured with and without the ultraviolet component of a light source of 3100 Kelvin in combination with a C.I.E. (International Commission on Illumination) Z (blue) filter, does not exceed 2.0%.

Note¹: Post-consumer fiber in any percentage is encouraged, provided that the requirements of this Standard are met.

Basis weight: 20 by 26 inches, 500 sheets
(pounds) 65

A tolerance of $\pm 5\%$ shall be allowed.

Acidity: pH value by cold extraction shall average not less than 6.5

Bursting strength: Average not less than (lb/in²) 40

Smoothness: Average each side not to less than
(Sheffield units) 250

Ruling and writing quality: Lines ruled and characters written with ball point and felt tip pens shall be clear and free from excessive feathering.

Watermark: Paper shall not be watermarked.

Erasing quality: Paper shall retain good ruling, writing, and typing quality, texture, and surface appearance, without ink spreading after repeated erasure.

Curl: Paper shall lie flat before and after processing through a high speed copier or laser printer with either no tendency to curl or with a curl which can be overcome under reasonable working conditions.

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Brightness: Shall target not less than 60% or as specified.

Color: The paper in the order (or publication) shall be uniform and the color variation shall not exceed DE (CIELAB) = 1.0.

Formation: Shall be uniform with a parchment appearance.

Cleanliness: The dirt count for each side of the paper shall not exceed 250 specks per square meter. No sample sheet (8½ x 11" in size) shall contain more than one defect with equivalent area of 0.25mm² or greater.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. The acceptance criteria in Part 4 shall apply.

¹ This grade is 100% cotton/linen fiber content. Unless the cotton/linen fibers in this paper were recovered from an item used by the consumer, the cotton/linen fibers are not a post-consumer fiber.

JCP H30 — LASER-FINISH PARCHMENT; WHITE, NATURAL WHITE AND COLORS

Parchment Paper — FSC 9310

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For high quality offset printing of certificates, citations, diplomas, enrolled bills, etc., requiring processing in copiers and laser printers, execution with pen and ink, erasing quality, and highest degree of permanence (archival quality) when specified. Printed matter may include text and line illustrations and must be suitable for embossing. The archival paper is available in limited quantities.

Stock: 100% bleached chemical wood pulp.

Note: Not less than 30% post-consumer fiber. Any percent over 30 percentage points is encouraged, provided that the requirements of this Standard are met.

Basis weight: 17 by 22 inches, 500 sheets
(pounds) 24 32
20 by 26 inches, 500 sheets (pounds) 65

A tolerance of ±5% shall be allowed.

Folding endurance: Average not less than
(MIT double folds) 22 25 30

Ruling and writing quality: Lines ruled and characters written with ball point and felt tip pens shall be clear and free from excessive feathering.

Watermark: Paper shall not be watermarked.

Erasing quality: Paper shall retain good ruling, writing, and typing quality, texture, and surface appearance, without ink spreading after repeated erasure.

Curl: Paper shall lie flat before and after processing through a high speed copier or laser printer with either no tendency to curl or with a curl which can be overcome under reasonable working conditions.

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Brightness: The white paper shall target not less than 82% or as specified.

Color: The paper in the order (or publication) shall be uniform and the color variation shall not exceed DE (CIELAB) = 1.0.

For colored stock, paper shall match one of the established color standards in Part 3 or match a color sample supplied by the ordering agency. Colors shall not fade or transfer (rub off) and shall appear even and uniform on the surface of the sheet. The sheet shall not be 2-sided.

Finish and formation: Shall be uniformed with a parchment appearance.

Cleanliness: The dirt count for each side of the paper shall not exceed 250 specks per square meter. No sample sheet (8½ x 11" in size) shall contain more than one defect with equivalent area of 0.25mm² or greater.

Option

Archival paper: This option is for products requiring permanence (archival quality). Add the properties below to the basic standard above.

Acidity: pH value by cold extraction shall average not less than 7.5. The paper shall contain not less than 2% calcium carbonate.

Note: Any deviation in this requirement is sufficient cause for rejection of the paper.

Tearing strength: Average each direction
not less than (grams) 50 70 100

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. The acceptance criteria in Part 4 shall apply except as noted above.

JCP H40 – SMOOTH-FINISH DIPLOMA PAPER; CREAM WHITE

Parchment Paper — FSC 9310

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For high quality offset printing of certificates, citations, diplomas, etc., requiring execution with pen and ink, erasing quality, and highest degree of permanence (archival quality) when specified. Printed matter may include text and line illustrations and suitable for processing in laser printers. The archival paper is available in limited quantities.

Stock: 100% bleached chemical wood pulp.

Note: Not less than 30% post-consumer fiber. Any percent over 30 percentage points is encouraged, provided that the requirements of this Standard are met.

Basis weight: 20 by 26 inches, 500 sheets
(pounds) 65

A tolerance of $\pm 5\%$ shall be allowed.

Bursting strength: Average not less than (lb/in²) 45

Smoothness: Average each side not to exceed
(Sheffield units) 300

Ruling and writing quality: Lines ruled and characters written with ball point and felt tip pens shall be clear and free from excessive feathering.

Watermark: Paper shall not be watermarked.

Erasing quality: Paper shall retain good ruling, writing, and typing quality, texture, and surface appearance, without ink spreading after repeated erasure.

Watermark: Paper shall not be watermarked.

Curl: Paper shall lie flat before and after processing through a high speed copier or laser printer with either no tendency to curl or with a curl which can be overcome under reasonable working conditions.

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Brightness: The white paper shall target not less than 60% or as specified.

Color: The paper in the order (or publication) shall be uniform and the color variation shall not exceed DE (CIELAB) = 1.0.

Formation: Shall be uniform and have a parchment appearance.

Cleanliness: The dirt count for each side of the paper shall not exceed 250 specks per square meter. No sample sheet (8½ x 11" in size) shall contain more than one defect with equivalent area of 0.25mm² or greater.

Option

Archival paper: This option is for products requiring permanence (archival quality). Add the properties below to the basic standard above.

Acidity: pH value by cold extraction shall average not less than 7.5. The paper shall contain not less than 2% calcium carbonate.

Note: Any deviation in this requirement is sufficient cause for rejection of the paper.

Tearing strength: Average each direction not less than
(grams) 100

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. The acceptance criteria in Part 4 shall apply except as noted above.

JCP J10 — LEDGER; WHITE AND COLORS

Ledger Paper — FSC 7530

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For face and back offset printing of open forms, ledgers, notices, posters, etc., requiring execution with pen and ink and erasing quality. Printed matter may include text, line illustrations, halftones and solid reverses.

Stock: Groundwood pulp not to exceed 1%.

Note: Not less than 30% post-consumer fiber. Any percent over 30 percentage points is encouraged, provided that the requirements of this Standard are met.

Basis weight: 17 by 22 inches, 500 sheets
(pounds) 24 28 32 44

A tolerance of $\pm 5\%$ shall be allowed.

Acidity: pH value shall average not less than 5.0

Bursting strength: Average not less than
(lb/in²) 22 25 28 37

Tearing strength: Average each direction not less than
(grams) 35 50 60 90

Thickness: Average (mils) 4.0 4.7 5.3 7.3

A tolerance of ± 0.0005 inch shall be allowed. Paper shall be uniform and shall not vary more than 0.0004 inch from edge to edge.

Ruling and writing quality: Lines ruled and characters written with ball point and felt tip pens shall be clear and free from excessive feathering.

Erasing quality: Paper shall retain good ruling, writing, and typing quality, texture, and surface appearance, without ink spreading after repeated erasure.

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Brightness: The white paper shall target not less than 85% or as specified.

Color: The paper in the order (or publication) shall be uniform and the color variation shall not exceed DE (CIELAB) = 1.0.

For colored stock, paper shall match one of the established color standards in Part 3 or match a color sample supplied by the ordering agency. Colors shall not fade or transfer (rub off) and shall appear even and uniform on the surface of the sheet. The sheet shall not be 2-sided.

Finish and formation: Shall be uniform.

Cleanliness: The dirt count for each side of the paper shall not exceed 650 specks per square meter. No sample sheet (8½ x 11" in size) shall contain more than one defect with equivalent area of 0.25mm² or greater.

Option

Alkaline paper: This option is for products requiring above average permanence. Add the properties below to the basic standard above.

Stock: 100% bleached chemical wood pulp.

Note: Not less than 30% post-consumer fiber. Any percent over 30 percentage points is encouraged, provided that the requirements of this Standard are met.

Acidity: pH value by cold extraction shall average not less than 7.5. The paper shall contain not less than 2% calcium carbonate.

Note: Any deviation in this requirement is sufficient cause for rejection of the paper.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. The acceptance criteria in Part 4 shall apply except as noted above.

JCP J20 — 25% COTTON LEDGER

Ledger Paper — FSC 7530

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For face and back offset printing of open forms, ledgers, notices, posters, etc., requiring execution with pen and ink and erasing quality. Printed matter may include text, line illustrations, halftones and solid reverses.

Stock: Not less than 25% cotton or linen fibers; the remainder bleached chemical wood pulp.

Note¹: Not less than 30% post-consumer fiber. Any percent over 30 percentage points is encouraged provided that the requirements of this Standard are met.

Basis weight: 17 by 22 inches, 500 sheets
(pounds) 24 32 44

A tolerance of $\pm 5\%$ shall be allowed.

Acidity: pH value average not less than 6.5

Bursting strength: Average not less than
(lb/in²) 25 34 47

Tearing strength: Average each direction not less than
(grams) 35 60 80

Thickness: Average (mils) 4.0 5.3 7.3

A tolerance of ± 0.0005 inch shall be allowed. Paper shall be uniform and shall not vary more than 0.0004 inch from edge to edge.

Ruling and writing quality: Lines ruled and character written with ball point and felt tip pens shall be clear and free from excessive feathering.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. The acceptance criteria in Part 4 shall apply.

Erasing quality: Paper shall retain good ruling, writing, typing quality, texture, and surface appearance without ink spreading after repeated erasure.

Watermark²: Shall be the seal of the United States, with one star, on the basis of four times on a sheet 17 by 22 inches, one in each quarter. The watermark shall be clear and legible. When viewed from the felt side of the sheet, the design shall appear as illustrated in Part 3 (Style D.)

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Brightness: Shall target 88%.

Color: The paper in the order (or publication) shall be uniform and the color variation shall not exceed DE (CIELAB) = 1.0.

Finish and formation: Shall be uniform.

Cleanliness: The dirt count for each side of the paper shall not exceed 100 specks per square meter. No sample sheet (8½ x 11" in size) shall contain more than one defect with equivalent area of 0.25mm² or greater.

¹ Unless the cotton/linen fibers used in the manufacture of this paper were recovered from an item used by the consumer, the cotton/linen fibers are not a post-consumer recovered fiber.

² Full size copy will be provided upon request. This grade with the Government watermark is typically not available in less than mill run quantities. The Government watermark may be waived at the discretion of the ordering agency.

JCP J30 — 100% COTTON LEDGER

Ledger Paper — FSC 7530

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For highest quality multicolor face and back offset printing of open forms, ledgers, certificates, citations, diplomas, legal documents, etc., requiring execution with pen and ink, erasing quality and permanence. Printed matter may include text, line illustrations and solid reverses.

Stock: 100% cotton or linen fibers.

No fluorescent (optical) brighteners shall be added to the pulp or paper during manufacture. Fluorescence, due to residual white water, broke, or natural fibers, is permissible provided the increase in reflectance, measured with and without the ultraviolet component of a light source of 3100 Kelvin in combination with a C.I.E. (International Commission on Illumination) Z (blue) filter, does not exceed 2.0%.

Note¹: Post-consumer recovered fiber in any percentage is encouraged, provided that the requirements of this Standard are met.

Basis weight: 17 by 22 inches, 500 sheets
(pounds) 24 32 44

A tolerance of ±5% shall be allowed.

Acidity: pH value by cold extraction shall average not less than 6.5

Bursting strength: Average not less than
(lb/in²) 50 70 95

Tearing strength: Average each direction not less than
(grams) 50 65 90

Thickness: Average (mils) 4.0 5.3 7.3

A tolerance of ±0.0005 inch shall be allowed. Paper shall be uniform and shall not vary more than 0.0004 inch from edge to edge.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. The acceptance criteria in Part 4 shall apply.

Ruling and writing quality: Lines ruled and characters written with ball point and felt tip pens shall be clear and free from excessive feathering.

Erasing quality: Paper shall retain good ruling, writing, and typing quality, texture, and surface appearance, without ink spreading after repeated erasure.

Watermark²: Shall be the seal of the United States, with four stars, on the basis of four times on a sheet 17 by 22 inches, one in each quarter. The watermark shall be clear and legible. When viewed from the felt side of the sheet, the design shall appear as illustrated in Part 3 (Style C).

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Brightness: Shall target not less than 80%.

Color: The paper in the order (or publication) shall be uniform and the color variation shall not exceed DE (CIELAB) = 1.0.

Finish and Formation: Shall be uniform

Cleanliness: The dirt count for each side of the paper shall not exceed 250 specks per square meter. No sample sheet (8½ x 11" in size) shall contain more than one defect with equivalent area of 0.25mm² or greater.

¹ This is a specialty grade and available in limited quantities. The grade has 100% cotton/linen fiber content. Unless the cotton/linen fibers used in the manufacture of the paper were recovered from an item used by the consumer, the cotton/linen fibers are not a post-consumer recovered fiber.

² Full size copy will be provided upon request. The Government watermark may be waived at the discretion of the ordering agency.

JCP K10 – INDEX; WHITE AND COLORS

Index Paper – FSC 9310

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For face and back offset printing of index cards, identification cards, office forms, notices, posters, covers, etc., requiring execution with pen and ink, erasing quality and above average permanence. Printed matter may include text, line illustrations, halftones and solid reverses.

Stock: Groundwood pulp not to exceed 1%.

Note: Not less than 10% post-consumer fiber. Any percent over 10 percentage points is encouraged provided that the requirements of this Standard are met.

Basis weight: 25½ by 30½ inches, 500 sheets
(pounds) 90 110 140 170

A tolerance of ±5% shall be allowed.

Acidity: pH value average not less than 6.5 for white paper and 5.0 for colors

Bursting strength: Average not less than
(lb/in²) 40 50 60 75

Tearing strength: Average each direction not less than
(grams) 40 55 70 80

Thickness: Average (mils) 7.4 9.0 11.5 13.5

A tolerance of ±0.0005 inch shall be allowed. Paper shall be uniform and shall not vary more than 0.0004 inch from edge to edge.

Ruling and writing quality: Lines ruled and characters written with ball point and felt tip pens shall be clear and free from excessive feathering.

Erasing quality: Paper shall retain good ruling, writing, typing quality, texture, and surface appearance without ink spreading after repeated erasure.

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Brightness: The white paper shall target no less than 88% or as specified.

Color¹: The paper in the order (or publication) shall be uniform and the color variation shall not exceed DE (CIELAB) = 1.0.

For colored stock, paper shall match one of the established color standards in Part 3 or match a color sample supplied by the ordering agency. Colors shall not fade or transfer (rub off) and shall appear even and uniform on the surface of the sheet. The sheet shall not be 2-sided.

Finish and formation: Shall be uniform.

Cleanliness: The dirt count for each side of the paper shall not exceed 650 specks per square meter. No sample sheet (8½ x 11" in size) shall contain more than one defect with equivalent area of 0.25mm² or greater.

Option

Alkaline paper: This option is for products requiring above average permanence. Replace the properties in the basic standard above with the ones below.

Stock: 100% bleached chemical wood pulp.

Note: Not less than 10% post-consumer fiber. Any percent over 10 percentage points is encouraged provided that the requirements of this Standard are met.

Acidity: pH value by cold extraction shall be not less than 7.0. The paper shall contain not less than 2% calcium carbonate.

Note: Any deviation in this requirement is sufficient cause for rejection of the paper.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. The acceptance criteria in Part 4 shall apply except as noted above.

Color: For a tight color match, designate a "precision" match in the solicitation. If no designation is specified, the "regular" acceptance criteria will be applied in judging the acceptability of the color match between the standard and the supplied paper stock for hue, chroma, and saturation.

¹ Contact the GPO for availability of these colors: blue, buff, green, pink, salmon or yellow. Exact matches to these color standards are available in mill run quantities.

JCP K20 — 25% COTTON INDEX; WHITE AND COLORS

Index Paper — FSC 9310

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For high quality face and back offset printing of card indexes, identification cards, office forms, notices, posters, covers, etc., requiring execution with pen and ink, erasing quality and above average permanence. Printed matter may include text, line illustrations, halftones and solid reverses.

Stock: Not less than 25% cotton or linen fibers; the remainder bleached chemical wood pulp.

Note¹: Not less than 10% post-consumer fiber. Any percent over 10 percentage points is encouraged, provided that the requirements of this Standard are met.

Basis weight: 25½ by 30½ inches 500 sheets
(pounds) 90 110 140 170

A tolerance of ±5% shall be allowed.

Acidity: pH value shall average not less than 7.0

Bursting strength: Average not less than
(lb/in²) 40 65 85 100

Thickness: Average (mils) 7.4 9.0 11.5 13.8

A tolerance of ±0.0005 inch shall be allowed for the 90, 110 and 140 pound stock and ±0.0008 inch for the 170 pound stock. Paper shall be uniform and shall not vary more than 0.0004 inch from edge to edge.

Ruling and writing quality: Lines ruled and characters written with ball point and felt tip pens shall be clear and free from excessive feathering.

Erasing quality: Paper shall retain good ruling, writing, and typing quality, texture, and surface appearance, without ink spreading after repeated erasure.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. The acceptance criteria in Part 4 shall apply.

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Brightness: The white paper shall target not less than 88% or as specified.

Color: The paper in the order (or publication) shall be uniform and the color variation shall not exceed DE (CIELAB) = 1.0.

For colored stock, paper shall match one of the established color standards in Part 3 or match a color sample supplied by the ordering agency. Colors shall not fade or transfer (rub off) and shall appear even and uniform on the surface of the sheet. The sheet shall not be 2-sided.

Finish and formation: Shall be uniform.

Cleanliness: The dirt count for each side of the paper shall not exceed 250 specks per square meter. No sample sheet (8½ x 11" in size) shall contain more than one defect with equivalent area of 0.25mm² or greater.

¹ Unless the cotton/linen fibers used in the manufacture of this paper were recovered from an item used by the consumer, the cotton/linen fibers are not a post-consumer recovered fiber.

JCP K30 — 100% COTTON INDEX; CREAM WHITE

Index Paper — FSC 9310

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For high quality face and back offset printing of card indexes, identification cards, office forms, notices, posters, covers, etc., requiring execution with pen and ink, erasing quality and above average permanence. Printed matter may include text, line illustrations, halftones and solid reverses. A mill run grade.

Stock: 100% cotton or linen fibers.

No fluorescent (optical) brighteners shall be added to the pulp or paper during manufacture. Fluorescence, due to residual white water, broke, or natural fibers, is permissible; provided the increase in reflectance, measured with and without the ultraviolet component of a light source of 3100 Kelvin in combination with a C.I.E. (International Commission on Illumination) Z (blue) filter, does not exceed 2.0%.

Note¹: Post-consumer recovered in fiber in any percentage is encouraged, provided that the requirements of this Standard are met.

Basis weight: 25½ by 30½ inches 500 sheets
(pounds) 125

A tolerance of ±5% shall be allowed.

Acidity: pH value shall average not less than 6.5

Bursting strength: Average not less than (lb/in²) 100

Thickness: Average (mils) 10.0

A tolerance of ±0.0005 inch shall be allowed. Paper shall be uniform and shall not vary more than 0.0004 inch from edge to edge.

Ruling and writing quality: Lines ruled and characters written with ball point and felt tip pens shall be clear and free from excessive feathering.

Erasing quality: Paper shall retain good ruling, writing, and typing quality, texture, and surface appearance, without ink spreading after repeated erasure.

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Brightness: Shall target 60% or as specified.

Color: The paper in the order (or publication) shall be uniform and the color variation shall not exceed DE (CIELAB) = 1.0.

Formation: Shall be uniform.

Cleanliness: The dirt count for each side of the paper shall not exceed 250 specks per square meter. No sample sheet (8½ x 11" in size) shall contain more than one defect with equivalent area of 0.25mm² or greater.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. The acceptance criteria Part 4 shall apply.

¹ The grade is 100% recycled with the 100% cotton/linen fiber content. Unless the cotton/linen fibers used in the manufacture of the paper were recovered from an item used by the consumer, the cotton/linen fibers are not a post-consumer recovered fiber.

JCP L10 — GLOSS-COATED COVER

Cover Paper — FSC 9310

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For high quality multicolor face and back offset printing of covers for books, periodicals, etc. Printed matter may include text, line illustrations, halftones up to 150-line screen and solid reverses.

Stock: Groundwood pulp not to exceed 1%.

Note: No post-consumer fiber is required. Any percentage of post-consumer fiber is encouraged provided that the requirements of this Standard are met.

Basis weight: 20 by 26 inches, 500 sheets
(pounds) 65 80 100

A tolerance of ±5% shall be allowed.

Acidity: pH value by cold extraction shall average not less than 6.5

Bursting strength: Average not less than
(lb/in²) 35 50 60

Tearing strength: Average each direction not less than
(grams). 75 100 120

Opacity: Average not less than
(percent) 93 94 95

No individual specimen shall average less than
(percent) 91 92 93

Gloss (75°): Average each side not less than
(percent) (applies to all weights) 50

Smoothness: Average each side not to exceed
(Sheffield units) (applies to all weights) 110

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Brightness: Average not less than 85% or as specified.

Color: The paper in the order (or publication) shall be uniform and the color variation shall not exceed DE (CIELAB) = 1.0.

Formation: Coating shall be uniform; shall be uniformly applied; shall not be gritty, mottled, stippled, or ribbed in appearance and shall not exhibit cracks or flake off.

Cleanliness: The dirt count for each side of the paper shall not exceed 100 specks per square meter. No sample sheet (8½" x 11" in size) shall contain more than one defect with equivalent area of 0.25mm² or greater.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. The acceptance criteria Part 4 shall apply.

JCP L11 — NO. 1 GLOSS-COATED COVER

Cover Paper — FSC 9310

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For highest quality multicolor face and back offset printing of covers for books, periodicals, etc. Printed matter may include text, line illustrations, halftones up to 200-line screen and solid reverses.

Stock: Free from groundwood or unbleached wood pulp.

Note: No post-consumer fiber is required. Any percentage of post-consumer fiber is encouraged provided that the requirements of this Standard are met.

Basis weight: 20 by 26 inches, 500 sheets
(pounds) 65¹ 80 100 120

A tolerance of ±5% shall be allowed.

Acidity: pH value of the coating shall average not less than 6.5

Bursting strength: Average not less than
(lb/in²) 45 55 65 75

Tearing strength: Average each direction not less than
(grams) 80 100 120 140

Opacity: Average not less than
(percent) 96 97 98 98

No individual specimen shall average less than
(percent) 94 95 96 96

Gloss (75°): Average each side not less than
(percent) (applies to all weights) 50

Smoothness: Average each side not to exceed
(Sheffield units) (applies to all weights) 55

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Brightness: Average not less than 92% or as specified.

Color: The paper in the order (or publication) shall be uniform and the color variation shall not exceed DE (CIELAB) = 1.0.

Formation: Coating shall be uniform; shall be uniformly applied; shall not be gritty, mottled, stippled, or ribbed in appearance; and shall not exhibit cracks or flake off.

Cleanliness: The dirt count for each side of the paper shall not exceed 25 specks per square meter. No sample sheet (8½" x 11" in size) shall contain more than one defect with equivalent area of 0.25mm² or greater.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. The acceptance criteria Part 4 does NOT apply.

¹ The caliper (nominal thickness) for this weight stock may not meet USPS requirement.

JCP L12 — NO. 2 GLOSS-COATED COVER

Cover Paper — FSC 9310

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For highest quality multicolor face and back offset printing of covers for book, periodicals, etc. Printed matter may include text, line illustrations, halftones up to 200-line screen and solid reverses.

Stock: Free from groundwood or unbleached wood pulp.

Note: No post-consumer fiber is required. Any percentage of post-consumer fiber is encouraged provided that the requirements of this Standard are met.

Basis weight: 20 by 26 inches, 500 sheets
(pounds) 65¹ 80 100 120

A tolerance of ±5% shall be allowed.

Acidity: pH value of the coating shall average not less than 6.5

Bursting strength: Average not less than
(lb/in²) 40 50 60 70

Tearing strength: Average each direction not less than
(grams) 80 100 120 140

Opacity: Average not less than
(percent) 96 97 98 98

No individual specimen shall average less than
(percent) 94 95 96 96

Gloss (75°): Average each side not less than
(percent) (applies to all weights) 50

Smoothness: Average each side not to exceed
(Sheffield units) (applies to all weights) 110

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Brightness: Average not less than 88% or as specified.

Color: The paper in the order (or publication) shall be uniform and the color variation shall not exceed DE (CIELAB) = 1.0.

Formation: Coating shall be uniform; shall be uniformly applied; shall not be gritty, mottled, stippled, or ribbed in appearance; and shall not exhibit cracks or flake off.

Cleanliness: The dirt count for each side of the paper shall not exceed 50 specks per square meter. No sample sheet (8½ x 11" in size) shall contain more than one defect with equivalent area of 0.25mm² or greater.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. The acceptance criteria Part 4 does NOT apply.

¹ The caliper (nominal thickness) for this weight stock may not meet USPS requirement.

JCP L20 – VELLUM-FINISH COVER; WHITE AND COLORS

Cover Paper — FSC 9310

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For high quality multicolor face and back offset printing of covers for book, periodicals, etc. Printed matter may include text, line illustrations, halftones up to 150-line screen and solid reverses.

Stock: Groundwood pulp not to exceed 1%.

Note: Not less than 30% post-consumer fiber. Any percent over 30 percentage points is encouraged provided that the requirements of this Standard are met.

Basis weight: 20 by 26 inches, 500 sheets
(pounds) 50¹ 65 80 100

A tolerance of ±5% shall be allowed.

Acidity: pH value by cold extraction shall average not less than 6.5

Bursting strength: Average not less than
(lb/in²) 30 40 50 60

Tearing strength: Average each direction not less than
(grams) 100 130 160 180

Opacity: Average not less than
(percent) 94 95 96 97

No individual specimen shall average less than
(percent) 92 93 94 95

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Brightness: The white paper shall average not less than 88% or as specified.

Color²: The paper in the order (or publication) shall be uniform and the color variation shall not exceed DE (CIELAB) = 1.0.

For colored stock, paper shall match one of the established color standards in Part 3 or match a color sample supplied by the ordering agency. Colors shall not fade or transfer (rub off) and shall appear even and uniform on the surface of the sheet. The sheet shall not be 2-sided.

Finish and formation: Shall be uniform.

Cleanliness: The dirt count for each side of the paper shall not exceed 650 specks per square meter. No sample sheet (8½ x 11" in size) shall contain more than one defect with equivalent area of 0.25mm² or greater.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. The acceptance criteria Part 4 shall apply.

¹ This weight is available in limited quantities.

² Contact the GPO for availability of these colors: vermilion red, canary yellow, sun orange, Killarney green, Victoria green, Dutch blue, Venice blue, peach tan, pecan brown, saddle tan, brown, light gray and sand gray. Exact matches to these color standards are available in mill run quantities.

JCP L21 – SMOOTH AND EMBOSSED COVER; WHITE AND COLORS

Cover Paper – FSC 9310

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For higher quality multicolor face and back offset printing of brochures, programs, covers for books, periodicals, etc. Printed matter may include text, line illustrations, halftones up to 150-line screen and solid reverses on the smooth stock. Grade allows for unique finishes for special print requirements.

Stock: Groundwood pulp not to exceed 1%.

Note: Not less than 30% post-consumer fiber. Any percent over 30 percentage points is encouraged, provided that the requirements of this Standard are met.

Basis weight: 20 by 26 inches, 500 sheets
(pounds) 65 80 100 130

A tolerance of ±5% shall be allowed.

Tearing strength: Average each direction not less than
(grams) 130 160 200 220

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Brightness: The white paper shall target 88% or as specified.

Color: The paper in the order (or publication) shall be uniform and the color variation shall not exceed DE (CIELAB) = 1.0.

For colored stock, paper shall match one of the established color standards in Part 3 or match a color sample supplied by the ordering agency. Colors shall not fade or transfer (rub off) and shall appear even and uniform on the surface of the sheet. The sheet shall not be 2-sided.

Finish: Paper shall have a smooth-finish or as specified (linen, leatherette, felt, etc.).

Formation: Shall be uniform.

Cleanliness: The dirt count for each side of the paper shall not exceed 650 specks per square meter. No sample sheet (8½ x 11" in size) shall contain more than one defect with equivalent area of 0.25mm² or greater.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards* Part 2. The acceptance criteria Part 4 shall apply.

JCP L23 — UNCOATED COVER

Cover Paper — FSC 9310

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For high quality multicolor face and back offset printing of brochures, programs, covers for books, periodicals, etc. Printed matter may include text, line illustrations, halftones up to 150-line screen and solid reverses.

Stock: Groundwood pulp not to exceed 1%.

Note: Not less than 30% post-consumer fiber. Any percent over 30 percentage points is encouraged, provided that the requirements of this Standard are met.

Basis weight: 20 by 26 inches, 500 sheets
(pounds) 50 65 80 100

A tolerance of ±5% shall be allowed.

Bursting strength: Average not less than
(lb/in²) 30 40 50 60

Tearing strength: Average each direction not less than
(grams) 100 130 160 180

Opacity: Average not less than
(percent) 94 95 96 97

No individual specimen shall average less than
(percent) 92 93 94 95

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Brightness: Shall target not less than 88% or as specified.

Color: The paper in the order (or publication) shall be uniform and the color variation shall not exceed DE (CIELAB) = 1.0.

Finish and Formation: Shall be uniform.

Cleanliness: The dirt count for each side of the paper shall not exceed 650 specks per square meter. No sample sheet (8½ x 11" in size) shall contain more than one defect with equivalent area of 0.25mm² or greater.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. The acceptance criteria Part 4 shall apply.

JCP L24 – VELLUM BRISTOL COVER; WHITE AND COLORS

Cover Paper – FSC 9310

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For multicolor face and back offset printing of brochures, programs, covers for books, periodicals, etc. Printed matter may include text, line illustrations, halftones up to 150-line screen and solid reverses.

Stock: Groundwood pulp not to exceed 1%.

Note: Not less than 30% post-consumer fiber. Any percent over 30 percentage points is encouraged, provided that the requirements of this Standard are met.

Basis weight: 22½ by 28½ inches, 500 sheets
(pounds) 57 67 80

A tolerance of ±5% shall be allowed.

Bursting strength: Average not less than
(lb/in²) 28 32 40

Tearing strength: Average each direction not less than
(grams) 90 110 135

Opacity: Average not less than
(percent) 93 94 95

No individual specimen shall average less than
(percent) 91 92 93

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Brightness: The white paper shall target 88% or as specified.

Color: The paper in the order (or publication) shall be uniform and the color variation shall not exceed DE (CIELAB) = 1.0.

For colored stock, paper shall match one of the established color standards in Part 3 or match a color sample supplied by the ordering agency. Colors shall not fade or transfer (rub off) and shall appear even and uniform on the surface of the sheet. The sheet shall not be 2-sided.

Finish and Formation: Shall be uniform.

Cleanliness: The dirt count for each side of the paper shall not exceed 650 specks per square meter. No sample sheet (8½ x 11" in size) shall contain more than one defect with equivalent area of 0.25mm² or greater.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. The acceptance criteria Part 4 shall apply.

JCP L40 — UNCOATED LAID-FINISH COVER; WHITE AND COLORS

Cover Paper — FSC 9310

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For high quality multicolor face and back offset printing of brochures, programs, covers for books, pamphlets, etc. requiring attractive appearance. Has a rough, soft finish with decorative chain marks running at right angles to laid lines. Printed matter may include text, line illustrations, and halftones up to 150-line screen.

Stock: Groundwood pulp not to exceed 1%.

Note: Not less than 30% post-consumer fiber. Any percent over 30 percentage points is encouraged, provided that the requirements of this Standard are met.

Basis weight: 20 by 26 inches, 500 sheets
(pounds) 65 80 100

A tolerance of $\pm 5\%$ shall be allowed.

Acidity: pH value shall average not less than 6.5

Bursting strength: Average not less than
(lb/in²) 25 30 40

Tearing strength: Average each direction not less than
(grams) 80 100 125

Chain marks: Shall run parallel to machine direction of the sheet and match the standard sample.

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Brightness: The paper white shall target 88% or as specified.

Color: The paper in the order (or publication) shall be uniform and the color variation shall not exceed DE (CIELAB) = 1.0.

For colored stock, paper shall match one of the established color standards in Part 3 or match a color sample supplied by the ordering agency. Colors shall not fade or transfer (rub off) and shall appear even and uniform on the surface of the sheet. The sheet shall not be 2-sided.

Finish: Paper shall have a laid-finish.

Formation: Shall be uniform.

Cleanliness: The dirt count for each side of the paper shall not exceed 650 specks per square meter. No sample sheet (8½ x 11" in size) shall contain more than one defect with equivalent area of 0.25mm² or greater.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. The acceptance criteria Part 4 shall apply.

JCP L50 – MATTE-COATED COVER

Cover Paper – FSC 9310

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For high quality multicolor face and back offset printing of brochures, programs, covers for books, periodicals, etc. Printed matter may include text, line illustrations, halftones up to 150-line screen and solid reverses.

Stock: Groundwood pulp not to exceed 1%.

Note: No post-consumer fiber is required. Any percentage of post-consumer fiber is encouraged provided that the requirements of this Standard are met.

Basis weight: 20 by 26 inches, 500 sheets
(pounds) 65 80 100

A tolerance of ±5% shall be allowed.

Acidity: pH value of the coating shall average not less than 6.5

Bursting strength: Average not less than
(lb/in²) 40 50 60

Tearing strength: Average each direction not less than
(grams) 80 100 120

Opacity: Average not less than
(percent) 95 95 96

No individual specimen shall average less than
(percent) 93 93 94

Gloss (75°): Average each side not to exceed
(percent) 25 25 25

Smoothness: Average each side not to exceed
(Sheffield units) (applies to all weights) 120

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Brightness: Average not less than 85% or as specified.

Color: The paper in the order (or publication) shall be uniform and the color variation shall not exceed DE (CIELAB) = 1.0.

Formation: Coating shall be uniform; shall be uniformly applied; shall not be gritty, mottled, stippled, or ribbed in appearance; and shall not exhibit cracks or flake off.

Cleanliness: The dirt count for each side of the paper shall not exceed 100 specks per square meter. No sample sheet (8½ x 11" in size) shall contain more than one defect with equivalent area of 0.25mm² or greater.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. The acceptance criteria Part 4 shall apply.

JCP L60 — SILK / DULL-COATED COVER

Cover Paper — FSC 9310

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For high quality multicolor face and back offset printing of covers for books, periodicals, etc. Low glare. Sometimes referred to as satin. Printed matter may include text, line illustrations, and halftones up to 150-line screen and solid reverses.

Stock: Groundwood pulp not to exceed 1%.

Note: No post-consumer fiber is required. Any percentage of post-consumer fiber is encouraged provided that the requirements of this Standard are met.

Basis weight: 20 by 26 inches, 500 sheets
(pounds) 65 80 100

A tolerance of $\pm 5\%$ shall be allowed.

Acidity: pH value of the coating shall average not less than 6.5

Bursting strength: Average not less than
(lb/in²) 30 40 50

Tearing strength: Average each direction not less than
(grams) 80 100 120

Opacity: Average not less than
(percent) 95 95 96

No individual specimen shall average less than
(percent) 93 93 94

Gloss (75°): Average each side not to exceed
(percent) (applies to all weights) 25 to 40

Smoothness: Average each side not to exceed
(Sheffield units) (applies to all weights) 120

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Brightness: Average not less than 85% or as specified.

Color: The paper in the order (or publication) shall be uniform and the color variation shall not exceed DE (CIELAB) = 1.0.

Formation: Coating shall be uniform; shall be uniformly applied; shall not be gritty, mottled, stippled, or ribbed in appearance; and shall not exhibit cracks or flake off.

Cleanliness: The dirt count for each side of the paper shall not exceed 100 specks per square meter. No sample sheet (8½ x 11" in size) shall contain more than one defect with equivalent area of 0.25mm² or greater.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. The acceptance criteria Part 4 shall apply.

JCP L61 — NO. 1 SILK / DULL-COATED COVER

Cover Paper — **FSC 9310**

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For highest quality multicolor face and back offset printing of reply cards, covers for book, periodicals, etc. Low glare. Sometimes referred to as satin. The 65-pound stock may not be suitable for use as a reply card. Printed matter may include text, line illustrations, and halftones up to 200-line screen and solid reverses.

Stock: Free from groundwood or unbleached wood pulp.

Note: No post-consumer fiber is required. Any percentage of post-consumer fiber is encouraged provided that the requirements of this Standard are met.

Basis weight: 20 by 26 inches, 500 sheets
(pounds) 65¹ 80 100 120

A tolerance of ±5% shall be allowed.

Acidity: pH value of the coating shall average not less than 6.5

Bursting strength: Average not less than
(lb/in²) 45 55 65 75

Tearing strength: Average each direction not less than
(grams) 80 100 120 140

Opacity: Average not less than
(percent) 97 97 98 98

No individual specimen shall average less than
(percent) 95 95 96 96

Gloss (75°): Average each side not to exceed
(percent) (applies to all weights) 30 to 50

Smoothness: Average each side not to exceed
(Sheffield units) (applies to all weights) 60

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Brightness: Average not less than 90% or as specified.

Color: The paper in the order (or publication) shall be uniform and the color variation shall not exceed DE (CIELAB) = 1.0.

Formation: Coating shall be uniform; shall be uniformly applied; shall not be gritty, mottled, stippled, or ribbed in appearance; and shall not exhibit cracks or flake off.

Cleanliness: The dirt count for each side of the paper shall not exceed 25 specks per square meter. No sample sheet (8½ x 11" in size) shall contain more than one defect with equivalent area of 0.25mm² or greater.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards* Part 2. The acceptance criteria Part 4 does NOT apply.

¹ The caliper (nominal thickness) for this weight stock may not meet USPS requirement.

JCP L62 — NO. 2 SILK / DULL-COATED COVER

Cover Paper — FSC 9310

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For highest quality multicolor face and back offset printing of reply cards, covers for book, periodicals, etc. Low glare. Sometimes referred to as satin. The 65 pound stock may not be suitable for use as a reply card. Printed matter may include text, line illustrations, and halftones up to 200-line screen and solid reverses.

Stock: Free from groundwood or unbleached wood pulp.

Note: No post-consumer fiber is required. Any percentage of post-consumer fiber is encouraged provided that the requirements of this Standard are met.

Basis weight: 20 by 26 inches, 500 sheets
(pounds) 65¹ 80 100 120

A tolerance of ±5% shall be allowed.

Acidity: pH value of the coating shall average not less than 6.5

Bursting strength: Average not less than
(lb/in²) 45 55 65 75

Tearing strength: Average each direction not less than
(grams) 80 100 120 140

Opacity: Average not less than
(percent) 96 97 98 98

No individual specimen shall average less than
(percent) 94 95 96 96

Gloss (75°): Average each side not to exceed
(percent) (applies to all weights) 25 to 50

Smoothness: Average each side not to exceed
(Sheffield units) (applies to all weights) 115

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Brightness: Average not less than 88% or as specified.

Color: The paper in the order (or publication) shall be uniform and the color variation shall not exceed DE (CIELAB) = 1.0.

Formation: Coating shall be uniform; shall be uniformly applied; shall not be gritty, mottled, stippled, or ribbed in appearance; and shall not exhibit cracks or flake off.

Cleanliness: The dirt count for each side of the paper shall not exceed 50 specks per square meter. No sample sheet (8½ x 11" in size) shall contain more than one defect with equivalent area of 0.25mm² or greater.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. The acceptance criteria Part 4 does NOT apply.

¹ The caliper (nominal thickness) for this weight stock may not meet USPS requirement.

JCP L70 — COATED ONE-SIDE COVER (C1S)

Cover Paper — FSC 9310

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For multicolor face and back offset printing of folders, tent cards, and covers for book, periodicals, etc. Has good strength for scoring, folding and die cutting. Printed matter may include text, line illustrations and halftones up to 150-line screen and solid reverses.

Stock: Free from groundwood or unbleached wood pulp.

Note: No post-consumer fiber is required. Any percentage of post-consumer fiber is encouraged provided that the requirements of this Standard are met.

	8pt	10pt	12pt	16pt	20pt	24pt
Caliper: A tolerance of ±0.0005 inch shall be allowed for the 8-point paper; ±0.0008 inch for the 10-, 12- and 16-point; and ±0.0010 inch for the 20 and 24-point.						
Bursting strength: Average not less than (lb/in ²)	40	50	60	70	90	120
Tearing strength: Average each direction not less than (grams)	75	100	120	150	160	180
Opacity: Average not less than (percent)	90	91	92	94	95	96
No individual specimen shall average less than (percent)	88	89	90	92	93	94
Gloss (75°): Average coated side not less than (percent)	50	50	50	50	50	50
Smoothness: Average each side not to exceed (Sheffield units)	110	110	110	110	110	110

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Brightness: Average not less than 88% or as specified.

Color: The paper in the order (or publication) shall be uniform and the color variation shall not exceed DE (CIELAB) = 1.0.

Formation: Coating shall be uniform; shall be uniformly applied; shall not be gritty, mottled, stippled, or ribbed in appearance; and shall not exhibit cracks or flake off.

Cleanliness: The dirt count for each side of the paper shall not exceed 250 specks per square meter. No sample sheet (8½ x 11" in size) shall contain more than one defect with equivalent area of 0.25mm² or greater.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. The acceptance criteria Part 4 does NOT apply.

JCP L72 – COATED TWO-SIDES COVER (C2S)

Cover Paper – FSC 9310

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For multicolor face and back offset printing of folders, tent cards, and covers for book, periodicals, etc. Has good strength for scoring, folding and die cutting. Printed matter may include text, line illustrations and halftones up to 150-line screen and solid reverses.

Stock: Free from groundwood or unbleached wood pulp.

Note: Not less than 10% postconsumer fiber. Any percent over 10 percentage points is encouraged provided that the requirements of this Standard are met.

	8pt	10pt	12pt	14pt	16pt	20pt	24pt
Caliper: A tolerance of ±0.0005 inch shall be allowed for the 8-point paper; ±0.0008 inch for the 10-, 12- and 16-point; and ±0.0010 inch for 20 and 24-point.							
Bursting strength: Average not less than (lb/in ²)	40	50	60	65	70	90	120
Tearing strength: Average each direction not less than (grams)	75	100	120	130	150	160	180
Opacity: Average not less than (percent)	90	91	92	93	94	95	96
No individual specimen shall average less than (percent)	88	89	90	91	92	93	94
Gloss (75°): Average each side not less than (percent)	50	50	50	50	50	50	50
Smoothness: Average each side not to exceed (Sheffield units)	110	110	110	110	110	110	110

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Brightness: Average not less than 88% or as specified.

Color: The paper in the order (or publication) shall be uniform and the color variation shall not exceed DE (CIELAB) = 1.0.

Formation: Coating shall be uniform; shall be uniformly applied; shall not be gritty, mottled, stippled, or ribbed in appearance; and shall not exhibit cracks or flake off.

Cleanliness: The dirt count for each side of the paper shall not exceed 250 specks per square meter. No sample sheet (8½ x 11" in size) shall contain more than one defect with equivalent area of 0.25mm² or greater.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. The acceptance criteria Part 4 does NOT apply.

JCP L80 — CAST-COATED COVER

Cover Paper — **FSC 9310**

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For highest quality multicolor face and back offset printing of reply cards, folders, tent cards, etc. Printed matter may include text, line illustrations, and halftones up to 200-line screen and solid reverses.

Stock: Free from groundwood or unbleached wood pulp.

Note: No post-consumer fiber is required. Any percentage of post-consumer fiber is encouraged provided that the requirements of this Standard are met.

	8pt	10pt	12pt	15pt	24pt
Caliper: A tolerance of ± 0.0005 inch shall be allowed for the 8-point paper; ± 0.0008 inch for the 10-, 12- and 15-point; and ± 0.0010 inch for the 24-point.					
Bursting strength: Average not less than (lb/in ²)	40	50	60	70	100
Tearing strength: Average each direction not less than (grams)	75	100	120	150	180
Gloss (20°) of coated side: Average coated side not less than (percent)	25	25	25	25	25
Smoothness: Average each side not to exceed (Sheffield units, coated side)	25	25	25	25	25
(Sheffield units, uncoated side)	120	120	120	120	120

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Brightness: Average not less than 88% or as specified.

Color: The paper in the order (or publication) shall be uniform and the color variation shall not exceed DE (CIELAB) = 1.0.

Formation: Coating shall be uniform; shall be uniformly applied; shall not be gritty, mottled, stippled, or ribbed in appearance, and shall not exhibit cracks or flake off.

Cleanliness: The dirt count for each side of the paper shall not exceed 250 specks per square meter. No sample sheet (8½ x 11" in size) shall contain more than one defect with equivalent area of 0.25mm² or greater.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. The acceptance criteria Part 4 does NOT apply.

JCP N10 — NO. 2 KRAFT

Kraft Paper — FSC 8135

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For face and back offset printing of top covers for tablets, separators, wrapping for packages, etc. Printed matter may include text and line illustrations.

Stock: 100% unbleached sulphate Kraft pulp.

Note: Not less than 5% post-consumer fiber. Any percent over 5 percentage points is encouraged provided that the requirements of this Standard are met.

Basis weight: 25 by 38 inches, 500 sheets

(pounds) 40 50 60 70 80

A tolerance of $\pm 5\%$ shall be allowed.

Bursting strength: Average not less than

(lb/in²) 28 34 38 42 47

Tearing strength: Average each direction not less than

(grams) 70 90 110 130 150

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. The acceptance criteria Part 4 shall apply.

JCP O-10 — GUMMED, CONVENTIONAL ADHESIVE

Miscellaneous Paper — FSC 9310

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For printing on the ungummed side of the sheet in the production of labels, etc., requiring adhesive to glass, paper, wood and similar surfaces except silicon-treated materials. Printed matter may include text and line illustrations.

Stock: 100% chemical pulp.

Note: post-consumer fiber in any percent is encouraged, provided that the requirements of this Standard are met.

Basis weight: 17 by 22 inches (ungummed)
500 sheets (pounds) 16 18 20

A tolerance of $\pm 5\%$ shall be allowed.

Adhesive quality: The adhesive shall be light in color and have a distinct, visual color difference from the ungummed side. Gum shall not be obnoxious to taste or smell and shall be non-toxic. When properly moistened, the gummed paper shall adhere immediately and firmly to paper, cardboard, wood, and glass, except silicone-treated substrates.

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Brightness: Average not less than 81% or as specified.

Color: The paper in the order (or publication) shall be uniform and the color variation shall not exceed DE (CIELAB) = 1.0.

Finish and formation: Shall be uniform.

Cleanliness: The dirt count for each side of the paper shall not exceed 250 specks per square meter. No sample sheet (8½ x 11" in size) shall contain more than one defect with equivalent area of 0.25mm² or greater.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. The acceptance criteria Part 4 shall apply.

JCP O-25 — OPTICAL CHARACTER RECOGNITION (OCR) BOND

Miscellaneous Paper — FSC 9310

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For face and back offset printing. To be used on specified optical scanners.

Stock: 100% bleached chemical pulp.

No fluorescent (optical) brighteners shall be added to the pulp or paper during manufacture. Fluorescence, due to residual white water, broke, or natural fibers is permissible provided the increase in reflectance, measured with and without the ultraviolet component of a light source of 3100 Kelvin in combination with a C.I.E. (International Commission on Illumination) Z (blue) filter, does not exceed 2.0%.

Note: Post-consumer fiber in any percentage is encouraged provided that the requirements of this Standard are met.

Basis weight: 17 by 22 inches, 500 sheets
(pounds) 16 18 20 24 32

A tolerance of $\pm 5\%$ shall be allowed.

Acidity: pH value average not less than 4.5

Stiffness: Average each direction not less than
(Gurley - milligrams) 30 40 50 100 200

Tearing strength: Average each direction not less than
(grams) 30 35 40 50 60

Opacity: Average not less than
(percent) 78 80 82 85 90

No individual specimen shall average less than
(percent) 76 78 80 83 88

Thickness: Average
(mils) 3.0 3.3 3.8 4.8 6.1

A tolerance ± 0.0005 inch shall be allowed. Paper shall be uniform and shall not vary more than 0.0004 inch from edge to edge.

Porosity: Average not less than
(seconds) 15 15 15 18 20

Smoothness: Average each side not to exceed
(Sheffield units) (applies to all weights) 100 to 190

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Brightness: Average not less than 88% or as specified.

Color: The paper in the order (or publication) shall be uniform and the color variation shall not exceed DE (CIELAB) = 1.0.

Formation: Shall be uniform.

Cleanliness: The dirt count for each side of the paper shall not exceed 10 parts per million (ppm). No sample sheet (8½ x 11" in size) shall contain more than one defect with equivalent area of 0.25mm² or greater.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. The acceptance criteria Part 4 does NOT apply.

JCP O-26 — OPTICAL MARK READ (OMR) BOND; WHITE, VIOLET OR GRAY

Miscellaneous Paper — FSC 9310

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For face and back offset printing. To be used on specified optical scanners.

Stock: 100% bleached chemical pulp.

No fluorescent (optical) brighteners shall be added to the pulp or paper during manufacture. Fluorescence, due to residual white water, broke, or natural fibers is permissible provided the increase in reflectance, measured with and without the ultraviolet component of a light source of 3100 Kelvin in combination with a C.I.E. (International Commission on Illumination) Z (blue) filter, does not exceed 2.0%.

Note: post-consumer fiber in any percentage is encouraged provided that the requirements of this Standard are met.

	White	Violet	Gray
Basis weight: 17 by 22 inches, 500 sheets (pounds)	21	21	21

A tolerance of ±5% shall be allowed.

Dimensional stability: Shall not exceed (percent change)

	White	Violet	Gray
Machine direction	0.10	0.10	0.10
Cross direction	0.25	0.25	0.25

Stiffness: Average each direction not less than (Gurley - milligrams)

	White	Violet	Gray
	100	100	100

Bursting strength: Average not less than (lb/in²)

	White	Violet	Gray
	25	25	25

Pick resistance: Average each side not less than 12-A Dennison wax number.

Opacity: Average (percent)

	White	Violet	Gray
	82 to 85	91 to 94	92 to 95

Note: Opacity shall be uniform throughout the form.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. The acceptance criteria Part 4 does NOT apply.

Thickness: Average (mils) 4.5 4.5 4.5

A tolerance ±0.0005 inch shall be allowed. Paper shall be uniform and shall not vary more than 0.0004 inch from edge to edge.

Porosity: Average not less than (seconds) (applies to all weights) 30

Smoothness: Average each side (Sheffield units) (applies to all weights) 100 to 200

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Brightness: White paper shall target not less than 81% or as specified.

Color: The paper in the order (or publication) shall be uniform and the color variation shall not exceed DE (CIELAB) = 1.0. The CIELAB values (III D65, 10° observer) of the color standards are:

	White	Violet	Gray
L* =	94.4	89.8	70.0
a* =	-0.8	1.0	9.0
b* =	3.8	1.0	9.0

Formation: Shall be extremely uniform.

Cleanliness: The dirt count for each side of the paper shall not exceed 10 parts per million (ppm). No sample sheet (8½ x 11" in size) shall contain more than one defect with equivalent area of 0.25mm² or greater.

JCP O-27 — OPTICAL MARK SENSE SCANNER (OMSS) BOND

Miscellaneous Paper — FSC 9310

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For face and back offset printing. To be used on specified optical scanners.

Stock: 100% bleached chemical pulp.

No fluorescent (optical) brighteners shall be added to the pulp or paper during manufacture. Fluorescence, due to residual white water, broke, or natural fibers is permissible provided the increase in reflectance, measured with and without the ultraviolet component of a light source of 3100 Kelvin in combination with a C.I.E. (International Commission on Illumination) Z (blue) filter, does not exceed 2.0%.

Note: Post-consumer fiber in any percentage is encouraged provided that the requirements of this Standard are met.

Basis weight: 17 by 22 inches, 500 sheets
(pounds) 24

A tolerance of $\pm 5\%$ shall be allowed.

Moisture content: Average (percent) 5.0

A tolerance of ± 0.5 percentage point shall be allowed.

Dimensional stability: Shall not exceed
(percent change)
Machine direction 0.10
Cross direction 0.25

Stiffness: Average each direction not less than
(Machine direction, Gurley milligrams) 200
(Cross direction, Gurley milligrams) 100

Bursting strength: Average not less than (lb/in²) 19

Tearing strength: Average each direction not less than
(grams) 65

Pick resistance: Average each side not less than 12-A
Dennison wax number.

Opacity: Average not less than (percent) 90

No individual specimen shall average less than
(percent) 88

Thickness: Average (mils) 4.4

A tolerance ± 0.0005 inch shall be allowed. Paper shall be uniform and shall not vary more than 0.0004 inch from edge to edge.

Porosity: Average not less than (seconds) 20

Smoothness: Average each side not to exceed
(Sheffield units) 100 to 200

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Brightness: Shall target not less than 81% or as specified. The reflectance in the 700 to 1,000 nanometer region shall average not less than 70% when measured with a print contrast meter.

Color: The paper in the order (or publication) shall be uniform and the color variation shall not exceed DE (CIELAB) = 1.0.

Cleanliness: The dirt count for each side of the paper shall not exceed 10 parts per million (ppm). No sample sheet (8½ x 11" in size) shall contain more than one defect with equivalent area of 0.25mm² or greater.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. The acceptance criteria Part 4 shall apply.

JCP O-60 — PLAIN COPIER, XEROGRAPHIC; WHITE AND COLORS (Archival Quality)

Miscellaneous Paper — FSC 7530

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For use in specified laser printers, high speed copiers, plain paper copiers, xerographic equipment and products requiring archival quality.

Stock: 100% bleached chemical pulp.

Note: Not less than 30% post-consumer fiber. Any percent over 30 percentage points is encouraged provided that the requirements of this Standard are met.

Basis weight: 17 by 22 inches, 500 sheets
(pounds) 20

A tolerance of $\pm 5\%$ shall be allowed.

Acidity: pH value by cold extraction shall be not less than 7.5. The paper shall contain not less than 2% calcium carbonate.

Note: Any deviation in this requirement is sufficient cause for rejection of the paper.

Moisture content: Average (percent) 4.5

A tolerance of ± 0.5 percentage point shall be allowed.

Stiffness: Average each direction not less than
(Machine direction, Gurley milligrams) 135
(Cross direction, Gurley milligrams) 60

Note: Any deviation in this requirement is sufficient cause for rejection of paper.

Tearing strength: Average each direction not less than
(grams) 40

Opacity: Average not less than (percent) 86

No individual specimen shall average less than
(percent) 84

Smoothness: Average each side not to exceed
(Sheffield units) 120 to 200

Note: Any deviation in this requirement is sufficient cause for rejection of the paper.

Ruling and writing quality: Lines ruled and characters written with ball point and felt tip pens shall be clear and free from excessive feathering.

Curl: Paper shall lie flat before and after processing through high speed copiers or laser printers with either no tendency to curl or with a curl which can be overcome under reasonable working conditions.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. The acceptance criteria Part 4 shall apply except as noted above.

Surface: Shall be free from lint, fuzz, wrinkles, waviness, folds, holes, tears and other detrimental defects.

Size and trim: Sheets: Paper shall be furnished in the size(s) ordered and shall be flat, trimmed square on four sides with clean smooth edges, and evenly jogged. A tolerance of $\pm 1/16$ inch shall be allowed except for sheets $8\frac{1}{2}$ by 14 inches or less, then a tolerance of $\pm 1/32$ shall apply. Successive sheets within any package shall not differ from each other by more than $1/32$ inch. Paper shall be considered square if the variation does not exceed $1/32$ inch.

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Brightness: The white paper shall target not less than 88% or as specified.

Color: The paper in the order (or publication) shall be uniform and the color variation shall not exceed DE (CIELAB) = 1.0.

For colored stock, the commercial color for the specified shade shall apply except when an exact match to one of the established color standards in Part 3 is required or to match a color sample supplied by the ordering agency. Colors shall not fade or transfer (rub off) and shall appear even and uniform on the surface of the sheet. The sheet shall not be 2-sided.

Formation: Shall be uniform.

Cleanliness: The dirt count for each side of the paper shall not exceed 250 specks per square meter. No sample sheet ($8\frac{1}{2}$ x 11" in size) shall contain more than one defect with equivalent area of 0.25mm^2 or greater.

Performance: Shipments of any qualified product shall perform satisfactorily on laser printers and high speed xerographic equipment. There shall not be more than one paper-caused jam or one document with unacceptable image quality due to the paper per 5,000 continuous-copy run at atmospheric conditions of $21^\circ\text{C} \pm 5.5^\circ\text{C}$ and $50\% \pm 20\%$ relative humidity.

JCP O-61 — HIGH QUALITY XEROGRAPHIC COPIER, LASER PRINTER

Miscellaneous — FSC 7530

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For use in producing camera-ready copies, specified laser printers, high speed copiers, plain paper copiers and xerographic equipment.

Stock: 100% bleached chemical pulp.

Note: Post-consumer fiber in any percentage is encouraged provided that the requirements of this Standard are met.

Basis weight: 17 by 22 inches, 500 sheets
(pounds) 24 28

A tolerance of $\pm 5\%$ shall be allowed.

Moisture content: Average (percent) 4.5

A tolerance of ± 0.3 percentage point shall be allowed.

Stiffness: Average each direction not less than
(Machine direction, Gurley milligrams) 150 200
(Cross direction, Gurley milligrams) 75 100

Note: Any deviation in this requirement is sufficient cause for rejection of paper.

Tearing strength: Average each direction not less than
(grams) 36 40

Opacity: Average not less than (percent) 88 90
No individual specimen shall average less than
(percent) 86 88

Smoothness: Average each side
(Sheffield units) 110 110

Note: Any deviation in this requirement is sufficient cause for rejection of the paper.

Ruling and writing quality: Lines ruled and characters written with ball point and felt tip pens shall be clear and free from excessive feathering.

Curl: Paper shall lie flat before and after processing through a high speed copier or laser printer with either no tendency to curl or with a curl which can be overcome under reasonable working conditions.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. The acceptance criteria Part 4 shall apply except as noted above.

Surface: Shall be free from lint, fuzz, wrinkles, waviness, folds, holes, tears and other detrimental defects.

Size and trim: Sheets: Paper shall be furnished in the size(s) ordered and shall be flat, trimmed square on four sides with clean smooth edges, and evenly jogged. A tolerance of $\pm 1/16$ inch shall be allowed except for sheets $8\frac{1}{2}$ by 14 inches or less, then a tolerance of $\pm 1/32$ shall apply. Successive sheets within any package shall not differ from each other by more than $1/32$ inch. Paper shall be considered square if the variation does not exceed $1/32$ inch.

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Brightness: Shall target 90% or as specified.

Color: The paper in the order (or publication) shall be uniform and the color variation shall not exceed DE (CIELAB) = 1.0.

Formation: Shall be uniform.

Cleanliness: The dirt count for each side of the paper shall not exceed 250 specks per square meter. No sample sheet ($8\frac{1}{2}$ x 11" in size) shall contain more than one defect with equivalent area of 0.25mm^2 or greater.

Performance: Shipments of any qualified product shall perform satisfactorily on laser printers and high speed xerographic equipment. There shall not be more than one paper caused jam or one document with unacceptable image quality due to the paper per 5,000 continuous-copy run at atmospheric conditions of $21^\circ\text{C} \pm 5.5^\circ\text{C}$ and $50\% \pm 20\%$ relative humidity.

JCP O-63 — PLAIN COPIER, XEROGRAPHIC COPIER, LASER PRINTER; COLORS

Miscellaneous Paper — FSC 7530

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For use in specified laser printers, high speed copiers, plain paper copiers and xerographic equipment.

Stock: Groundwood pulp not to exceed 1%.

Note: Not less than 30% post-consumer fiber. Any percent over 30 percentage points is encouraged provided that the requirements of this Standard are met.

Basis weight: 17 by 22 inches, 500 sheets
(pounds) 20 24 28

A tolerance of $\pm 5\%$ shall be allowed.

Moisture content: Average (percent) 4.5

A tolerance of ± 0.5 percent shall be allowed.

Tearing strength: Average each direction not less than
(grams) 36 38 42

Opacity: Average not less than
(percent) 90 91 93

No individual specimen shall average less than
(percent) 88 89 91

Thickness: Average (mils) 4.0 4.5 5.0

A tolerance of ± 0.0005 inch shall be allowed. Paper shall be uniform and shall not vary more than 0.0004 inch from edge to edge.

Ruling and writing quality: Lines ruled and characters written with ball point and felt tip pens shall be clear and free from excessive feathering.

Curl: Paper shall lie flat before and after processing through a high speed copier or laser printer with either no tendency to curl or with a curl which can be overcome under reasonable working conditions.

Surface: Shall be free from lint, fuzz, wrinkles, waviness, folds, holes, tears and other detrimental defects.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. The acceptance criteria Part 4 shall apply except as noted above.

Size and trim: Sheets: Paper shall be furnished in the size(s) ordered and shall be flat, trimmed square on four sides with clean smooth edges, and evenly jogged. A tolerance of $\pm 1/16$ inch shall be allowed except for sheets $8\frac{1}{2}$ by 14 inches or less, then a tolerance of $\pm 1/32$ shall apply. Successive sheets within any package shall not differ from each other by more than $1/32$ inch. Paper shall be considered square if the variation does not exceed $1/32$ inch.

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Color: The paper in the order (or publication) shall be uniform and the color variation shall not exceed DE (CIELAB) = 1.0. The commercial color for the specified shade shall apply except when an exact match to one of the established color standards in Part 3 is required or to match a color sample supplied by the ordering agency. Colors shall not fade or transfer (rub off) and shall appear even and uniform on the surface of the sheet. The sheet shall not be 2-sided.

Finish and Formation: Shall be uniform.

Cleanliness: The dirt count for each side of the paper shall not exceed 250 specks per square meter. No sample sheet ($8\frac{1}{2}$ x 11" in size) shall contain more than one defect with equivalent area of 0.25mm^2 or greater.

Performance: Shipments of any qualified product shall perform satisfactorily on laser printers and high speed xerographic equipment. There shall not be more than one paper caused jam or one document with unacceptable image quality due to the paper per 5,000 continuous-copy run at atmospheric conditions of $21^\circ\text{C} \pm 5.5^\circ\text{C}$ and $50\% \pm 20\%$ relative humidity.

JCP O-65 — PLAIN COPIER, XEROGRAPHIC; WHITE AND COLORS

Miscellaneous Paper — FSC 7530

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For use in specified laser printers, high speed copiers, plain paper copiers and xerographic equipment.

Stock: Groundwood pulp not to exceed 1%.

Note: Not less than 30% post-consumer fiber. Any percent over 30 percentage points is encouraged, provided that the requirements of this Standard are met.

Basis weight: 17 by 22 inches, 500 sheets
(pounds) 20

A tolerance of $\pm 5\%$ shall be allowed.

Moisture content: Average (percent) 4.5

A tolerance of ± 0.5 percentage point shall be allowed.

Stiffness: Average each direction not less than
(Machine direction, Gurley milligrams) 130
(Cross direction, Gurley milligrams) 60

Note: Any deviation in this requirement is sufficient cause for rejection of paper.

Tearing strength: Average each direction not less than
(grams) 30

Opacity: Average not less than (percent) 86
No individual specimen shall average less than
(percent) 84

Smoothness: Average each side
(Sheffield units) 130 to 200

Note: Any deviation in this requirement is sufficient cause for rejection of the paper.

Ruling and writing quality: Lines ruled and characters written with ball point and felt tip pens shall be clear and free from excessive feathering.

Curl: Paper shall lie flat before and after processing through a high speed copier or laser printer with either no tendency to curl or with a curl which can be overcome under reasonable working conditions.

Surface: Shall be free from lint, fuzz, wrinkles, waviness, folds, holes, tears and other detrimental defects.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. The acceptance criteria Part 4 shall apply except as noted above.

Size and trim: Sheets: Paper shall be furnished in the size(s) ordered and shall be flat, trimmed square on four sides with clean smooth edges, and evenly jogged. A tolerance of $\pm 1/16$ inch shall be allowed except for sheets $8\frac{1}{2}$ by 14 inches or less, then a tolerance of $\pm 1/32$ shall apply. Successive sheets within any package shall not differ from each other by more than $1/32$ inch. Paper shall be considered square if the variation does not exceed $1/32$ inch.

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Brightness: The white paper shall target not less than 88% or as specified.

Color: The paper in the order (or publication) shall be uniform and the color variation shall not exceed DE (CIELAB) = 1.0. For the colored stock, the commercial color for the shade shall apply except when an exact match to one of the established color standards in Part 3 is required or to match a color sample supplied by the ordering agency. Colors shall not fade or transfer (rub off) and shall appear even and uniform on the surface of the sheet. The sheet shall not be 2-sided.

Formation: Shall be uniform.

Cleanliness: The dirt count for each side of the paper shall not exceed 250 specks per square meter. No sample sheet ($8\frac{1}{2}$ x 11" in size) shall contain more than one defect with equivalent area of 0.25mm^2 or greater.

Performance: Shipments of any qualified product shall perform satisfactorily on laser printers and high speed xerographic equipment. There shall not be more than one paper caused jam or one document with unacceptable image quality due to the paper per 5,000 continuous-copy run at atmospheric conditions of $21^\circ\text{C} \pm 5.5^\circ\text{C}$ and $50\% \pm 20\%$ relative humidity.

JCP O-70 — 100% RECYCLED PLAIN COPIER, XEROGRAPHIC

Miscellaneous — FSC 7530

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For use in specified laser printers, high speed copiers, plain paper copiers and xerographic equipment; for products of a non-permanent nature.

Stock: Not less than 100% total recovered fiber of which at least 50% shall be post-consumer fiber. Post-consumer fiber in any percent over 50 percentage is encouraged provided that the requirements of this Standard are met.

Basis weight: 17 by 22 inches, 500 sheets
(pounds) 20 24
A tolerance of $\pm 5\%$ shall be allowed.

Moisture content: Average (percent) 4.5
A tolerance of ± 0.5 percentage point shall be allowed.

Stiffness: Average each direction not less than
(Machine direction, Gurley milligrams) 130 150
(Cross direction, Gurley milligrams) 60 75

Note: Any deviation in this requirement is sufficient cause for rejection of paper.

Tearing strength: Average each direction not less than
(grams) 30 50

Opacity: Average not less than (percent) 86 90
No individual specimen shall average less than
(percent) 84 88

Smoothness: Average each side
(Sheffield units) (applies to all weights) 130 to 200

Note: Any deviation in this requirement is sufficient cause for rejection of the paper.

Ruling and writing quality: Lines ruled and characters written with ball point and felt tip pens shall be clear and free from excessive feathering.

Curl: Paper shall lie flat before and after processing through a high speed copier or laser printer with either no tendency to curl or with a curl which can be overcome under reasonable working conditions.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. The acceptance criteria Part 4 shall apply except as noted above.

Surface: Shall be free from lint, fuzz, wrinkles, waviness, folds, holes, tears and other detrimental defects.

Size and trim: Sheets: Paper shall be furnished in the size(s) ordered and shall be flat, trimmed square on four sides with clean smooth edges, and evenly jogged. A tolerance of $\pm 1/16$ inch shall be allowed except for sheets $8\frac{1}{2}$ by 14 inches or less, then a tolerance of $\pm 1/32$ shall apply. Successive sheets within any package shall not differ from each other by more than $1/32$ inch. Paper shall be considered square if the variation does not exceed $1/32$ inch.

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Brightness: The white paper shall target not less than 88% or as specified.

Color: The paper in the order (or publication) shall be uniform and the color variation shall not exceed DE (CIELAB) = 1.0.

Formation: Shall be uniform.

Cleanliness: The dirt count for each side of the paper shall not exceed 250 specks per square meter. No sample sheet ($8\frac{1}{2}$ x 11" in size) shall contain more than one defect with equivalent area of 0.25mm^2 or greater.

Performance: Shipments of any qualified product shall perform satisfactorily on laser printers and high speed xerographic equipment. There shall not be more than one paper caused jam or one document with unacceptable image quality due to the paper per 5,000 continuous-copy run at atmospheric conditions of $21^\circ\text{C} \pm 5.5^\circ\text{C}$ and $50\% \pm 20\%$ relative humidity.

JCP O-80 — CARBONLESS BOND; WHITE AND COLORS

Miscellaneous Paper — FSC 9310

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For offset printing. Generally for use on multiple copies of forms, etc., eliminating the need for carbon paper. Printed matter may include text, lines and ruled lines.

Stock: Free from groundwood pulp and all polychlorinated biphenyls (PCBs).

Note: Not less than 30% post-consumer fiber. Any percent over 30 percentage points is encouraged provided that the requirements of this Standard are met.

	CB	CFB	CF
Basis weight: 17 by 22 inches, 500 sheets (pounds) <i>As specified in the solicitation.</i> A tolerance of ±5% shall be allowed.			

Opacity: Average (percent)	81	81	81
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Ruling and writing quality: Lines ruled and characters written with ball point and felt tip pens on the face of the CB part shall be clear and free from excessive feathering.

Performance (reproducibility): Each part in a set shall be legible and the characters can be clearly read when written on the CB part with pencil, ballpoint pen, or with any impact typewriter. The images shall be permanent.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. The acceptance criteria Part 4 does NOT apply.

CB = coated back; **CFB** = coated face and back; and **CF** = coated face: Coating contains microscopic capsules of a colorless dye.

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Brightness: The white paper shall target not less than 79% or as specified.

Color: The paper in the order (or publication) shall be uniform and the color variation shall not exceed DE (CIELAB) = 1.0.

For colored stock, paper shall match one of the established color standards. Standards are blue, buff, green, goldenrod, pink, salmon or yellow. Colors shall not fade or transfer (rub off) and shall appear even and uniform on the surface of the sheet. When a match to a specific Government color standard has not been designated, the commercial shade or white shall apply. Color coordinates for selected standards are included in Part 3.

Finish and formation: Shall be uniform.

Cleanliness: The dirt count for each side of the paper shall not exceed 650 specks per square meter. No sample sheet (8½ x 11" in size) shall contain more than one defect with equivalent area of 0.25mm² or greater.

JCP O-90 — PRINTABLE PLASTIC FILM (SYNTHETIC PAPER)

Miscellaneous Paper — FSC 9310

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For multicolor face and back offset printing of manuals, maps, tags, outdoor billboards, etc., requiring a high degree of tear resistance including resistance to the action of water, mild aqueous solutions, grease, oils, frequent handling, extreme climatic temperatures, discoloration and must be durable. Printed matter may include text, line illustrations and halftones up to 175-line screen.

Stock: Shall be a non-cellulose substrate.

Note: Recovered material in any percentage is encouraged, provided that the requirements of this Standard are met.

Caliper: Average (mils) 3.7 5.5 7.5 10.5 12.0 14.0 16.0
 A tolerance of ±0.001 inch shall be allowed. Paper/film shall be uniform and shall not vary more than 0.0005 inch from edge to edge.

Opacity: Average not less than (percent) 90 91 92 94 94 95 95

Folding endurance: Average each direction not less than (MIT double folds) 4,000

Aged film: Age material for 48 hours in fadeometer with a Xenon Light Source. After fading, the L* component of the color shall not decrease more than 3 percentage points. And, folding endurance average each direction, not less than (MIT double folds) 2,000.

Surface: The film shall not flake, powder, crack, blister, or otherwise deteriorate during printing or other handling conditions; shall not discolor or become brittle; shall be uniform and free from mottle, and be free from particles that will pick, lift, fluff, or pile under normal conditions.

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Brightness: Shall not be less than 90% or as specified.

Color: The paper in the order (or publication) shall be uniform and the color variation shall not exceed DE (CIELAB) = 1.0.

Finish and formation: Shall be uniform.

Cleanliness: The paper (film) shall be clean.

Note: Some of the synthetic papers listed in the QPL found at gpo.gov are exclusively for offset printing. Some can be used for both offset printing and in copiers and printers. Contact the manufacturer of the synthetic paper for specific limitations and for end use applications.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. The acceptance criteria in Part 4 shall apply.

JCP O-91 — UNCOATED (TEAR-RESISTANT) SYNTHETIC PAPER

Miscellaneous Paper — FSC 9310

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For multicolor face and back offset printing of manuals, maps, tags, outdoor billboards, etc., requiring a high degree of tear resistance and durability. Printed matter may include text, line illustrations and halftones up to 175-line screen.

Stock: Shall be a cellulose-based substrate.

Note: Recovered material in any percentage is encouraged, provided that the requirements of this Standard are met.

Caliper: Nominal (mils) 4 5 6 8 10 12

Tearing strength: Average each direction not less than (grams) 60 80 100 140 150 160

Opacity: Average not less than (percent) 90 91 92 94 95 96

Surface: The paper shall not deteriorate during printing or other normal handling conditions; shall be uniform, free from mottle, and free from any particles that will pick, lift, fluff or pile on use under normal conditions.

Aged paper: Age material for 48 hours in fadeometer with a Xenon Light Source. After fading, the L* component of the color shall not decrease more than 3 percentage points.

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Brightness: Shall be not less than 85% or as specified.

Color: The paper in the order (or publication) shall be uniform and the color variation shall not exceed DE (CIELAB) = 1.0.

Finish and formation: Shall be uniform.

Cleanliness: The paper (film) shall be clean.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. The acceptance criteria Part 4 shall apply as noted above.

JCP P10 — HIGH-FINISH MANILA TAG

Tag Board — FSC 9310

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For face and back offset printing of file folders, tickets, tags, cards, notices, signs, covers for books and pads, etc., requiring strength and durability. Printed matter may include text, line illustrations and solid reverses.

Stock: Free from groundwood pulp.

Note: Not less than 20% post-consumer fiber. Any percent over 20 percentage points is encouraged provided that the requirements of this Standard are met.

Basis weight: 24 by 36 inches, 500 sheets
(pounds) 150

A tolerance of $\pm 5\%$ shall be allowed.

Bursting Strength: Average not less than
(lb/in²) 100

General appearance: The color, finish, and cleanliness shall conform to the standard sample(s) established by the Government.

Color: The paperboard in the order (or publication) shall be uniform and the color variation shall not exceed DE(CIELAB)= 1.0. Paper shall be manila or match the color sample supplied by the ordering agency. The commercial color standard is applicable unless specified that the color shall conform to the Government standard. Colors shall not fade and shall appear even and uniform on the surface of the sheet.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. The acceptance criteria Part 4 shall apply.

JCP P20 – HIGH-FINISH FOLDER STOCK; NATURAL AND COLORS

Tag Board – FSC 9310

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For face and back offset printing of file folders, etc., requiring strength and durability. Printed matter may include text, line illustrations and solid reverses.

Stock: 100% Kraft/sulphate pulp.

Note: Not less than 30% post-consumer fiber. Any percent over 30 percentage points is encouraged provided that the requirements of this Standard are met.

Basis weight: 24 by 36 inches, 500 sheets
(pounds) 105 150 165 250 330

A tolerance of $\pm 5\%$ shall be allowed.

Stiffness: Average each direction not less than
(Machine direction, Gurley milligram)
2000 5000 6000 14000 15000
(Cross direction, Gurley milligram)
800 1500 2000 7500 8000

Thickness: Average
(mils) 8 11 14 18 24

A tolerance of ± 0.001 inch shall be allowed.

Tearing strength: Average not less than
Machine direction (grams)
150 250 350 400 510
Cross direction (grams)
200 300 400 500 620

Ruling and writing quality: Lines ruled and characters written with ball point or felt tip pens shall be clear and free from excessive feathering.

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Color: The paperboard in the order (or publication) shall be uniform and the color variation shall not exceed DE(CIELAB)= 1.0.

For colored stock, paper shall match one of the established color standards or match the color sample supplied by the ordering agency. The commercial color standard is applicable unless specified that the color shall conform to the Government standard. Colors shall not fade and shall appear even and uniform on the surface of the sheet.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. The acceptance criteria Part 4 shall apply.

JCP Q20 — RAILROAD BOARD; WHITE AND COLORS

Cardboard — FSC 9310

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For offset printing of signs, display cards, cloth or paper-stripped covers or two-piece covers for use with bindings such as plastic combs, wire-o and spiral. Printed matter may include text, line illustrations and solid reverses.

Stock: Facing sheets shall be uncoated and shall not exceed 25% groundwood pulp.

Note: Not less than 80% total recovered fiber of which 15 percentage points shall be post-consumer fiber. Post-consumer fiber in any percent over 15 percentage is encouraged provided that the requirements of this Standard are met.

Thickness: Average (mils)	18.0	30.0	48.0
Tolerance (\pm inch)	0.001	0.002	0.0025

Curl: Paperboard shall lie flat with either no tendency to curl or with a curl which can be overcome under reasonable working conditions.

General appearance: The color, finish, and cleanliness shall conform to the standard sample(s) established by the Government.

Brightness: The white board shall target not less than 79% or as specified.

Color: The paperboard in the order (or publication) shall be uniform and the color variation shall not exceed DE(CIELAB)= 1.0.

For colored stock, paper shall match one of the established color standards or match the color sample supplied by the ordering agency. The commercial color standard is applicable, unless specified that the color shall conform to the Government standard. Colors shall not fade and shall appear even and uniform on the surface of the sheet.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. The acceptance criteria Part 4 shall apply.

JCP Q50 — CHEMICAL WOOD BOARD; COLORS

Cardboard — FSC 9310

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For face and back printing of file folders, cards, open forms and covers for books and manuals requiring strength and durability. Printed matter may include text, line illustrations and solid reverses.

Stock: 100% chemical wood pulp.

Note: Not less than 50% recovered fiber. Post-consumer fiber in any percentage is encouraged provided that the requirements of this Standard are met.

Basis weight: 22½ by 28½ inches 500 sheets (pounds) 100

A tolerance of ±5% shall be allowed.

Bursting strength: Average not less than (lb/in²) 80

Tearing strength: Average total both direction not less than (grams) 520

Thickness: Average (mils) 9.8

A tolerance of ±0.0005 inch shall be allowed. Paperboard shall be uniform and shall not vary more than 0.0004 inch from edge to edge.

Water resistance: Average not less than (minutes) 5

Abrasion: The abrasion loss shall be no greater than the standard sample when tested dry.

Curl: Paperboard shall lie flat with either no tendency to curl or with a curl which can be overcome under reasonable working conditions.

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Color: The paperboard in the order (or publication) shall be uniform and the color variation shall not exceed DE(CIELAB)= 1.0.

Board shall match the blue or tan standard or match the color sample supplied by the ordering agency. The commercial color standard is applicable unless specified that the color shall conform to the Government standard. Colors shall not fade and shall appear even and uniform on the surface of the board.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. The acceptance criteria Part 4 shall apply.

JCP Q80 — HIGH-FINISH RED WALLET BOARD

Cardboard — FSC 9310

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For face and back printing of file folders, expansion wallets, loose leaf or cloth-stripped covers for composition books. Printed matter may include text, line illustrations and solid reverses.

Stock: Principally chemical pulp; the remainder free from groundwood pulp.

Note: Not less than 20% post-consumer fiber. Any percent over 20 percentage points is encouraged provided that the requirements of this Standard are met.

Basis Weight: 24 by 36 inches, 500 sheets
(pounds) 160
A tolerance of $\pm 5\%$ shall be allowed.

Bursting strength: Average not less than (lb/in²) 115

Writing quality: Characters written with ballpoint and felt tip pens shall be clear and free from excessive feathering.

Curl: Paperboard shall lie flat with either no tendency to curl or with a curl which can be overcome, under reasonable working conditions.

General appearance: The color, finish, and cleanliness shall conform to the standard sample(s) established by the Government.

Color: The paperboard in the order shall be uniform. Board shall match the commercial standard for red or as specified. Colors shall not fade.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. The acceptance criteria Part 4 shall apply.

JCP R10 – PRESSBOARD; COLORS (TYPE III)

Miscellaneous Board – FSC 9310

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For face and back printing of filing guides, cloth or paper-stripped covers, and two-piece covers for use with general purpose bindings such as combs, wire-o and spiral. Printed matter may include text, line illustrations and solid reverses.

Stock: Not less than 50% recovered fiber of which 20 percentage points shall be post-consumer fiber.

Note: Post-consumer fiber in any percentage over 20 percentage points is encouraged provided that the requirements of this Standard are met.

Thickness: Average (mils) 15 20 25

A tolerance of ±0.001 inch shall be allowed for the 15 and 20 mil pressboard. For the 25 mil board, a tolerance of -0.001 inch shall be allowed.

Bursting strength: Average not less than
(lb/in²) 170 190 210

Density: Average
(g/cm³) (applies to all thicknesses) 0.8 to 1.0

Surface: Shall be closed in texture, hard, smooth and free from irregularities and blisters.

Curl: Paperboard shall lie flat with either no tendency to curl or with a curl which can be overcome, under reasonable working conditions.

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Color: The paperboard in the order shall be uniform. Board shall match the established Government standard for blue, light green, red, or match the color sample supplied by the ordering agency. The commercial color standard is applicable, unless specified that the color shall conform to the Government standard. Colors shall not fade and shall appear even and uniform on the surface of the sheet.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards* Part 2. The acceptance criteria Part 4 shall apply.

JCP R11 — PRESSBOARD; COLORS (TYPE I)

Miscellaneous Board — FSC 9310

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For face and back printing of filing guides, cloth or paper-stripped covers, and two-piece covers for use with bindings such as combs, wire-o and spiral that require good durability. Printed matter may include text, line illustrations and solid reverses. Use where greater stiffness is needed.

Stock: Not less than 50% recovered fiber of which 20 percentage points shall be post-consumer fiber.

Note: Post-consumer fiber in any percentage over 20 percentage points is encouraged provided that the requirements of this Standard are met.

Thickness: Average (mils) 15 20 25

A tolerance of ± 0.001 inch shall be allowed for the 15 and 20 mil pressboard. For the 25 mil board, a tolerance of -0.001 inch shall be allowed.

Bursting strength: Average not less than
(lb/in) 180 200 220

Density: Average
(g/cm³) (applies to all thicknesses) 1.4 to 1.6

Surface: Shall be closed in texture, hard, smooth and free from irregularities and blisters.

Curl: Paperboard shall lie flat with either no tendency to curl or with a curl which can be overcome, under reasonable working conditions.

General appearance: The color, finish, and cleanliness shall conform to the standard sample(s) established by the Government.

Color: The paperboard in the order shall be uniform. Board shall match the established Government standard for blue, light green, red, or match the color sample supplied by the ordering agency. The commercial color standard is applicable, unless specified that the color shall conform to the Government standard. Colors shall not fade and shall appear even and uniform on the surface of the sheet.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. The "precision requirements" of the acceptance criteria Part 4 shall apply.

JCP R20 — NEWSBOARD

Miscellaneous Board — FSC 9310

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For backing of pads and tablets, and for top and bottom protection in packaging.

Stock: Not less than 80% post-consumer fiber. Any percent over 80 percentage points is encouraged provided that the requirements of this Standard are met.

Basis weight: 26 by 38 inches, 50 pounds
(number sheets) 100

A tolerance of $\pm 5\%$ shall be allowed.

Bursting strength: Average not less than (lb/in²) 50

Thickness: Average (mils) 20

A tolerance of -0.001 inch and +0.002 inch shall be allowed.

Curl: Paperboard shall lie flat with either no tendency to curl or with a curl which can be overcome under reasonable working conditions.

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. The acceptance of the acceptance criteria Part 4 shall apply.

JCP R30 — BOOK COVER BOARD

Miscellaneous Board — FSC 9310

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For production of rigid bindings of ledgers and text books when covered with materials such as buckram, book cloth, etc.

Stock: Not less than 80% post-consumer fiber. Any percent over 80 percentage points is encouraged provided that the requirements of this Standard are met.

Basis weight: 25¼ by 30¼ inches 50 pounds

(number) sheets	9	12	17	19	21	25	31	41
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A tolerance of ±5% shall be allowed.

Bursting strength: Average not less than

(lb/in ²)	800	600	450	425	385	315	255	210
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Thickness: Average (inch)

0.22	0.17	0.12	0.11	0.098	0.08	0.065	0.049
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A tolerance of ±0.003 inch shall be allowed, except for No. 9 and 12 board. Then a tolerance of ±5% shall be allowed. On boards with the shorter dimension over 32 inches, an additional 50% of the above thickness tolerance shall be allowed.

Density: Average

(g/cm ³) (applies to all thicknesses)	1.4 to 1.6
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Curl: Paperboard shall lie flat with either no tendency to curl or with a curl which can be overcome under reasonable working conditions.

General appearance: The color, finish, and cleanliness shall conform to the standard sample(s) established by the Government.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. The “precision requirements” of the acceptance criteria Part 4 shall apply.

GENERAL REQUIREMENTS FOR ENVELOPES¹

Writing quality: Characters written with felt tip and ball point pens shall be clear and free from excessive feathering.

Flap adhesive: The remoistenable adhesive on the sealing flaps of the envelopes shall have a minimum thickness of 0.0006 inch uniformly applied. The flap shall not stick to the body of the envelope, but shall be capable of being quickly and securely sealed using 5 pounds of pressure after moistening. When opened, more than 20 seconds after sealing, the flap shall pull fibers from the body of the envelope over the entire adhesive area.

The adhesive shall be able to resist the heat and pressure of common office laser printers so the flap adhesive does not cause the flap to stick to the body of the envelope.

Size: The size of the envelope shall be as specified. No undersize envelopes are allowed. See QATAP for specific tolerances.

General appearance: Envelopes shall conform to the standard sample(s) adopted by the Government.

Color: Envelopes shall have a uniform shade throughout the order.

Cleanliness: No envelope (up to 300 cm² in size) shall contain more than two obvious and objectionable foreign particles with an equivalent area of 0.25 mm² or greater on the face of the envelope. The number of particles permitted is proportionately higher for larger envelope sizes.

Pressroom conditions: The bulk of these envelopes will be used in air-conditioned pressrooms maintained at 24°C ±2°C and 45% ±8% relative humidity or offices with atmospheric conditions of 21°C ±5.5°C and 50% ±5% relative humidity.

¹ The above requirements are in integral part of each envelope standard in the V-series.

JCP V10 – LIGHT-BROWN (KRAFT SHADE) ENVELOPE

Envelope

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For the insertion of correspondences, pamphlets, etc., manually or automated equipment. Suitable for letterpress and offset printing, processing in laser printers, automated mailing, sorting equipment. Printed matter may include text and line illustrations.

Stock: 100% Kraft/sulphate pulp.

Note: post-consumer fiber in any percentage is encouraged provided that the requirements of this Standard are met.

Basis weight: 17 by 22 inches, 500 sheets
(pounds) 24 28 32 40

A tolerance of $\pm 5\%$ shall be allowed.

Bursting strength: Average not less than
(lb/in²) 38 44 50 60

Writing quality: Characters written with ball point and felt tip pens shall be clear and free from excessive feathering.

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Color: Shall be the manufacturer's standard brown kraft shade. The envelopes in the order shall have a uniform shade.

Finish: Envelopes shall have a smooth finish or as specified.

Cleanliness: Shall be clean with no objectionable foreign particles on the surface that would detract from its usability.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. Additionally, see general envelope requirements and the acceptance criteria in Part 4 shall apply.

JCP V15 – WHITE KRAFT ENVELOPE

Envelope

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For the insertion of correspondences, pamphlets, etc., manually or automated equipment. Suitable for letterpress and offset printing, processing in laser printers, automated mailing, sorting equipment. Printed matter may include text and line illustrations.

Stock: 100% Kraft/sulphate pulp.

Note: post-consumer fiber in any percentage is encouraged provided that the requirements of this Standard are met.

Basis weight: 17 by 22 inches, 500 sheets
(pounds) 24 28 32 40

A tolerance of $\pm 5\%$ shall be allowed.

Bursting strength: Average not less than
(lb/in²) 38 44 50 60

Writing quality: Characters written with ball point and felt tip pens shall be clear and free from excessive feathering.

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Color: Shall be the manufacturer's standard white kraft shade. The envelopes in the order shall have a uniform shade.

Brightness: The white envelopes shall have brightness of not less than 82%.

Finish: Envelopes shall have a smooth finish or as specified.

Cleanliness: Shall be clean with no objectionable foreign particles on the surface that would detract from its usability.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. Additionally, see general envelope requirements and the acceptance criteria in Part 4 shall apply.

JCP V20 – WRITING ENVELOPE; WHITE AND COLORS

Envelope

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For the insertion of correspondences, etc., manually or automated equipment. Suitable for letterpress and offset printing, processing in laser printers, automated mailing, sorting equipment. Printed matter may include text and line illustrations.

Stock: Groundwood pulp not to exceed 1%; the remainder shall be bleached chemical pulp.

Note: post-consumer fiber in any percentage is encouraged provided that the requirements of this Standard are met.

Basis Weight: 17 by 22 inches, 500 sheets
(pounds) 20 24 28 32

A tolerance of ±5% shall be allowed.

Bursting strength: Average not less than
(lb/in²) 20 24 27 30

Opacity: Average not less than
(percent) 86 87 89 91

No individual specimen shall average less than
(percent) 84 85 87 89

Writing quality: Characters written with ball point and felt tip pens shall be clear and free from excessive feathering.

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Brightness: The white envelopes shall have brightness of not less than 88%.

Colored Envelopes: The commercial shade for the color specified shall apply except when an exact match to one of the established “business” color standards in Part 3 is required or to match a color sample supplied by the ordering agency.

Finish: Envelopes shall have a wove finish or as specified.

Cleanliness: Shall be clean with no objectionable foreign particles on the surface that would detract from its usability.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. Additionally, see general envelope requirements and the acceptance criteria in Part 4 shall apply.

JCP V40 — 25% COTTON BOND ENVELOPE

Envelope

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For the insertion of correspondences, etc., manually or automated equipment. Suitable for letterpress and offset printing, processing in laser printers, automated mailing, sorting equipment. Printed matter may include text and line illustrations.

Stock: Not less than 25% cotton or linen fibers.
Groundwood pulp not to exceed 1%.

Note: post-consumer fiber in any percentage is encouraged provided that the requirements of this Standard are met.

Basis weight: 17 by 22 inches, 500 sheets
(pounds) 20 24

A tolerance of $\pm 5\%$ shall be allowed.

Bursting strength: Average not less than
(lb/in²) 20 24

Opacity: Average not less than (percent) 85 86
No individual specimen shall average less than
(percent) 83 84

Writing quality: Characters written with ball point and felt tip pens shall be clear and free from excessive feathering.

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Brightness: The envelopes shall have brightness of not less than 88%.

Finish: Envelopes shall have a wove finish or as specified.

Cleanliness: Shall be clean with no objectionable foreign particles on the surface that would detract from its usability.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. Additionally, see general envelope requirements and the acceptance criteria in Part 4 shall apply.

JCP V90 – TYVEK™-FINISH ENVELOPE

Envelope

Use information: This paragraph is informational only and is not exclusively definitive of the end use. For the insertion of correspondences, etc., manually or automated equipment. Suitable for letterpress and offset printing, processing in laser printers, automated mailing, sorting equipment. Printed matter may include text and line illustrations.

Stock: White spunbonded polyethylene with the characteristics of DuPont's product No. 1073.

Note: Not less than 25% post-consumer material. Any percent over 25 percentage points is encouraged provided that the requirements of this Standard are met.

Basis Weight: 17 by 22 inches, 500 sheets (pounds) 18

A tolerance of $\pm 5\%$ shall be allowed.

Bursting strength: Average not less than (lb/in²) 140

Opacity: Average not less than (percent) 87

Thickness of single layer of polyethylene: Average (mils) 7.0

A tolerance of ± 0.001 inch shall allowed.

Writing quality: Characters written with ball point and felt tip pens shall be clear and free from excessive feathering.

General appearance: Paper shall conform to the standard sample(s) established by the Government.

Brightness: The envelopes shall have brightness of not less than 81%.

Finish: Similar to the commercial TYVEK™ product.

Cleanliness: Shall be clean with no objectionable foreign particles on the surface that would detract from its usability.

Testing: Shall be conducted in accordance with methods in *Government Paper Specification Standards Part 2*. Additionally, see general envelope requirements and the acceptance criteria Part 4 shall apply.

Part 2

TESTING STANDARDS AND DEFINITION OF TERMS

TESTING STANDARDS AND DEFINITION OF TERMS

General Information: The methods given in this Part of the Standard are required to be used in measuring the characteristics of papers that are specified in Part 1, Specifications. Alphanumeric citations of methods refer to the methods of the Technical Association of the Pulp and Paper Industry (TAPPI), unless otherwise indicated. Testing laboratories are advised to provide themselves with current editions of all methods. Methods of TAPPI can be obtained from TAPPI, www.tappi.org. Methods of the American Society for Testing and Materials (ASTM) can be obtained from www.astm.org. Sources of other methods are given in the text.

Paper suppliers are required to make such tests as may be necessary to ensure the delivery of the finished paper fully complies with the applicable specifications and standard samples. When requested by the procuring office, copies of the records developed by the paper supplier in making such tests shall be furnished. All paper, including paper in the manufacturing process, is subject to inspection as authorized by the contracting office.

Abrasion: Use method T-476.

Absolute moisture: Use method T-412.

Acidity (pH): (a) For uncoated papers, unless otherwise stated use method T-435. To make the test, weigh a specimen of 1.8 grams and add 125ml of distilled water. (b) For coated papers, use T-435, except to prepare the test specimen, use a razor blade and scrape the coating from an area from 5 paper specimens until sample weight of 0.12 grams is accumulated. Place the sample in a clean beaker, add 50 ml of distilled water, let the coating sit and soak for one hour before taking the pH. (c) For a "cold extraction," use method T-509.

Alkaline paper: Paper which has a pH value greater than 7; stock made by an alkaline manufacturing process. Paper longevity is enhanced.

Basis Weight: Use method T-410.

BCTMP: Bleached "chemi-thermo-mechanical pulp (CTMP)". It is pulp that has been bleached to a higher brightness, usually greater than 80%. CTMP is pulp produced by a less vigorous chemical process (lower temperature, shorter time, less extreme pH) and much of the lignin-component of the wood has not been removed.

Bleached: Process in which papermaking fibers are chemically treated to whiten, purify and stabilize the fiber.

Blocking: Use method D-918 of ASTM with the following modification. Take rectangular specimens 4-1/2 by 6 cm. Use a top plate and weight such that the total mass is equivalent to 70 g/cm² for coated paper. Prepare the specimens by soaking them in water at 25±5°C for 15 minutes. Ensure the water has free access to both sides of the specimen. Remove the specimens from the water. Shake each specimen gently to remove the excess water from surface. Restack the specimens and allow the assembly to dry at 25±5°C.

Brightness: Use method T-452.

Bursting strength: (a) For papers with a bursting strength less than 200 lbs/in², use method T-403; greater than 200 lb/in², use method T-807. (b) For the wet burst test, heat the cut specimens in an oven 105°C for 15 minutes. Immediately soak the specimens in water at 23±2°C temperature for 60 minutes and blot in accordance with method T-456. Test specimen per T-403 or T-807, as appropriate.

Calcium carbonate: See filler.

Chemical pulp: Wood chips treated with chemicals to remove impurities such as lignin, resins, gums, etc. to be used for papermaking. There are two basic types: sulfite and sulfate (kraft) and variations of these. See stock.

Chlorine-free: A term used to describe a bleaching process. Two types are associated with a chlorine-free paper: "elemental chlorine-free (ECF)" or "totally chlorine-free (TCF)." An ECF paper is made from pulp bleached with chlorine dioxide, but not elemental chlorine; whereas, TCF paper is made from pulp bleached without using chlorine or chlorine compounds. This also applies to the recycled fiber component of the paper.

Cleanliness: See dirt or speck.

Color by visual comparison: Use method T-515. Visual color assessments are made in a light booth with light sources having color temperature of 5000 and 7500 degrees Kelvin. Overall matches are described as "fair plus or good (or 0 demerits)," "fair (or 4 demerits)," "fair minus or marginal (or 12 demerits)," and "unacceptable (or 36 demerits)."

Color by spectral reflectance: Use T-524 and equations for CIELAB.

Color deviation and variation: Calculate using the CIELAB equations described in TAPPI TIS 0804-04. Measurements are made under the following conditions: II D65, 10° observer with the specular component included.

Conditioning for testing: Use method T-402. The atmosphere in the immediate vicinity of the testing apparatus shall be controlled to the required conditions during the test.

Cotton fiber paper: Paper containing at least 25% or more fibers derived from lint cotton, cotton linters, cotton or linen cloth cuttings. These papers fall in the broad category of paper containing “recovered material.”

Dealing with outlying test determinations: Use method T-1205.

Defects in paper by visual examination: Insofar as practical, defects in paper which are determined by visual examination shall be classified and defined in accordance with the Dictionary of Paper published by TAPPI.

Density: Measure the thickness of the specimen in centimeters per method T-411. Measure the weight of the specimen in grams per square centimeter per method T-410. Divide the weight by the thickness and report the density in “g/cm³.”

Dirt: Use method T-437.

ECF: See chlorine-free.

Equilibrium relative humidity: Use method T-502.

Erasing quality: The term “erasing quality” shall be construed to mean the retention of good writing quality and appearance of the surface after complete erasure of inked lines using a “hard” eraser such as Eberhard Faber[®] Union 110, Faber Castell Eraser Stick[®] 7099B, Weldon Roberts No. 38 or equivalent. Additionally, for map paper, the texture shall permit redrawing of sharp lines in ink after erasing.

Filler: The percent calcium carbonate in the filler shall be determined using method T-553.

Fluorescence: See optical brightener.

Folding endurance: Use method T-511.

Formaldehyde: Use method 111, “Tentative Method of Analysis for Formaldehyde Content of the Atmosphere (Colorimetric Method)” (43502-01-69T), by the Intersociety Committee, Methods of Air Sampling and Analysis, American Public Health Associations, pp 194-198 or www.apha.org.

FSC: Federal Supply Class: This is a code number established by GSA and DLA. It is used to classify various materials and products used by the Federal Government. Several unique codes are used to identify types of printing substrates.

Gloss: Use method T-480 for 75° and T-653 for 20°.

Grain: See machine direction.

Groundwood pulp: Papermaking fiber produced by mechanical means. This fiber is not the same as bleached chemi-thermo-mechanical pulps (BCTMP) which is a semi-chemical pulp. See stock.

Light transmission: Use method E-308 of ASTM.

Machine direction: Use method T-409.

Opacity: Use method T-425.

Optical brightener: Use method T-452, appendix C.

Permanent paper: (a) A stock that can resist chemical and physical changes over an extended time period (e.g. several hundred years.) This paper is acid-free, has a high initial strength and retains its strength over time. (b) Pub. L. 101-423, Joint Resolution to Establish a National Policy on Permanent Paper was passed October 1990, and states “It is the policy of the United States that Federal records, books, and publications of enduring value be produced on acid-free permanent papers.”

Pick resistance: Use method T-459.

PMU (Phosphor meter unit): Critical property in substrates used by the mail system. Specialized equipment furnished by the U.S. Postal Service to monitor the property.

Porosity: Use method T-460.

Post-consumer fiber: Fiber derived from material that has passed through the end user or consumer.

Recovered material: See definition in Solid Waste Disposal Act (Pub. L. 89-272) Sec. 6002, (h) Definitions.

RCRA: Resource Conservation and Recovery Act (Pub. L. 94-580); the beginning of establishing environmentally preferable standards for printing papers.

“Recycled” content paper: This term is not specifically defined in any statute but has come to mean paper containing any of the following recovered material categories: pre- and post-consumer fiber, pre- and post-manufacturing or industrial fiber, cotton or linen fiber, etc.

Reflectance (brightness) drop: Measure brightness at a specific spot using method T-452. Expose the spot to a xenon-arc lamp/continuous lamp fading apparatus for 48 standard fading hours per method 16E of the American Association of Textile Chemists and Colorist (www.aatcc.org). Recondition the sheet in the standard atmosphere and re-measure the brightness of the spot. The reflectance drop is the difference between the before and after exposure to the xenon-arc lamp.

Sampling: Sampling shall be conducted in accordance with method T-400. Agencies shall specify detailed plans and criteria for acceptance or rejection, tailored to specific end products, grades, end uses or other particular applications. Agencies may also specify detailed plans for visual examination of lots of paper for properties not included in this section. These documents shall be made available to the contractors and manufacturers.

Speck: A unit of dirt; any foreign matter 0.02 mm² or larger embedded in the sheet and visible when the sheet is examined in a well-lit room at a distance of 12 to 18 inches with the sheet resting at a 45° angle from the normal. Note: It should not be necessary to lift or rotate the sheet to see the speck. See dirt.

Stiffness: For the Gurley test, use method T-543 and specimen size that is 64 mm long by 51 mm wide.

Solid Waste Disposal Act: Amended RCRA establishing the definitions and categories of recovered material including post-consumer material.

Stock (fiber analysis): Use method T-401. Standards with the following requirements: (a) free from groundwood and unbleached wood pulp, or (b) 100% bleached chemical wood pulp or (c) remainder bleached chemical pulp should be interpreted to mean the paper is free from lignin.

TCF: See chlorine-free.

Tearing strength (resistance): Use method T-414.

Tensile strength: Use method T-494. For wet tensile strength, heat the specimens at 105°C for 15 minutes. Then use method T-456.

Thickness: Use method T-411.

Unbleached: Paper or pulp not treated with bleaching agents.

Vegetable-fiber paper: Paper which contains a significant amount of “renewable” plant fibers, not wood or cotton fibers.

Watermark: A translucent design in the paper. It is pressed into the paper by using a dandy roll during the paper manufacturing process.

Water resistance: Use T-433 or T-441, as appropriate for the stock.

Writing quality: (a) When “pen and ink” is specified, the degree of feathering is determined by writing on the specimen using a 1% ink solution of either C.I. Acid Red 1 (C.I. 18050) or C.I. Acid Green 3 (C.I. 42085) using an extra fine pen nib such as Estabrook Falcon #048, Hunt #107, Hunt #512 or equivalent. (b) If “ball point and felt tip pens” are specified, test the surface for writing quality with any three commercially available brand name pens.

Part 3

**STANDARD SAMPLES
AND
DRAWINGS**

SAMPLES AND COLOR INFORMATION

Physical Samples.

The Government standard samples referenced in this publication may be obtained by contacting GPO's Customer Service Office. For vendors and for prospective bidders, contact the Contracting Officer. Standard samples serve as the Government's referee or physical samples for the different grades of paper specified in this publication but specifically provide a visual for properties such as finish and formation that are not quantified nor very easily described using metrics.

Samples of paper most commonly used in printing projects are available in a separate Government Paper Samples Book. This collection of samples shows a number of paper grades with different finishes and texture, weights and thickness, as well as the selection of Government established colors. These samples are used to assist with the design of a print project.

Specifying papers that meet these specification standards will ensure that the print project consist of papers that are the best value.

Color / Brightness.

Many specification standards offer flexibility in the selection of the color or brightness. There are a couple of ways to do this: (1) attach a color swatch to the requisition or (2) state the desired color by "product name and color name or EQUAL." (Note: Product names and color should be verified periodically since paper companies frequently discontinue colors.)

When a specific color or brightness is not stated as a requirement, the color / brightness defaults to the requirements in the standard. Each standard ensures maximum competition for the paper grade.

There are a number of Government established colors with specific color coordinates as demonstrated on the right. Six of the established colors are common for the business paper grades: writing, bond, ledger, index and xerographic paper. (See Table 1.) Generally, these paper grades, unless purchased in a mill run quantity, are supplied as a commercial color match to the established standard of blue, buff, green, pink, salmon or yellow. Commercial color matches are not exact matches to the Government color but often suitable for the intended use.

The vellum-finish cover grade has an extensive set of established colors. A "good" color match to the Table 2 color standards is generally available through purchasing a mill run quantity which can be as small as 5,000 pounds up to 20,000 pounds depending on

the color and manufacturer. GPO central office carries inventories of these colors.

A series of white and cream white color standards have also been established and inventoried for in-plant printing. (See Table 3.)

Color matches are measured instrumentally as well as assessed visually for their acceptability. If a tight color match is critical, specify a "precision" acceptance criteria requirement.

Table 1: Business paper color

Blue	Pink
$L^*=81.5$	$L^*=71.8$
$a^*=-10.4$	$a^*=35.5$
$b^*=-5.0$	$b^*=2.1$
Buff	Salmon
$L^*=88.5$	$L^*=79.7$
$a^*=-2.11$	$a^*=1.3$
$b^*=-25.7$	$b^*=27.7$
Green	Yellow
$L^*=78.6$	$L^*=79.7$
$a^*=-16.2$	$a^*=-7.7$
$b^*=5.4$	$b^*=40.6$

Table 2: Vellum-finish cover color

Brown	Saddle tan
$L^*=56.8$	$L^*=46.1$
$a^*=-10.4$	$a^*=7.3$
$b^*=-5.0$	$b^*=18.9$
Canary yellow	Sand gray
$L^*=88.5$	$L^*=70.4$
$a^*=14.0$	$a^*=2.8$
$b^*=30.3$	$b^*=16.6$
Dutch blue	Sun orange
$L^*=56.1$	$L^*=67.8$
$a^*=-3.6$	$a^*=39.5$
$b^*=16.3$	$b^*=49.4$

Killarney green	Venice blue
$L^*=61.4$	$L^*=77.4$
$a^*=-18.2$	$a^*=-17.0$
$b^*=17.8$	$b^*=-12.9$

Light gray	Vermillion
$L^*=68.8$	$L^*=43.2$
$a^*=0.5$	$a^*=46.5$
$b^*=10.2$	$b^*=20.0$

Peach tan	Victoria green
$L^*=69.5$	$L^*=64.7$
$a^*=8.2$	$a^*=-23.7$
$b^*=26.0$	$b^*=1.1$

Peach brown

$L^*=63.5$
 $a^*=6.7$
 $b^*=22.6$

Table 3: Select White Color Standard

B (88 Brightness)	E (Cotton Papers)
$L^*=95.6$	$L^*=94.0$
$a^*=1.0$	$a^*=-0.5$
$b^*=-2.0$	$b^*=4.0$

C (72 Brightness)	F (80 Brightness)
$L^*=92.0$	$L^*=93.5$
$a^*=-0.5$	$a^*=-0.1$
$b^*=7.5$	$b^*=3.0$

D(E30)	Cream white
$L^*=93.5$	$L^*=92.4$
$a^*=-0.5$	$a^*=10.9$
$b^*=1.5$	$b^*=-19.2$

DRAWINGS— Watermarks

Two basic Government watermarks have been established. The Group I watermarks consist simply of the "eagle" and a "star" for each 25 percent of cotton/linen fiber specified for the paper.

The Group II watermarks have the word "recycled" in the design. The paper stock must have a postconsumer (PC) fiber content, whether it is a PC wood fiber or PC recovered (cotton/linen) fiber. Note: *Recovered material (cotton/linen) is not a PC recovered fiber.*

Group I



Style A: Watermark Design for 25% Bond and Ledger Papers

Group II



Style D: Watermark Design for Recycled 25% Bond and Ledger Papers



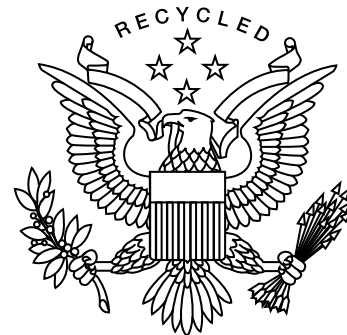
Style B: Watermark Design for 50% Bond and Ledger Papers



Style E: Watermark Design for Recycled 50% Bond and Ledger Papers



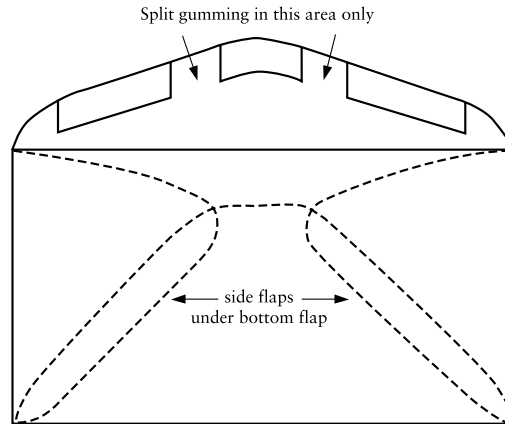
Style C: Watermark Design for 100% Writing, Bond, and Ledger Papers



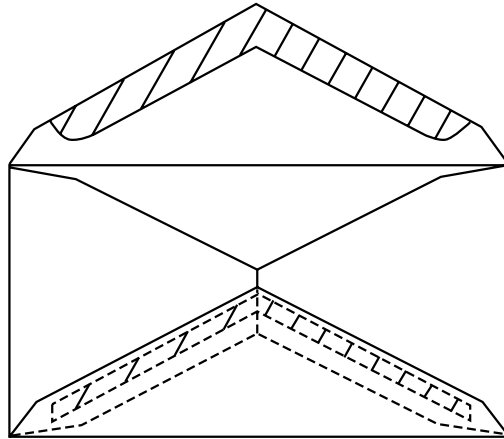
Style F: Watermark Design for Recycled 100% Writing, Bond, and Ledger Papers

DRAWINGS— Envelopes

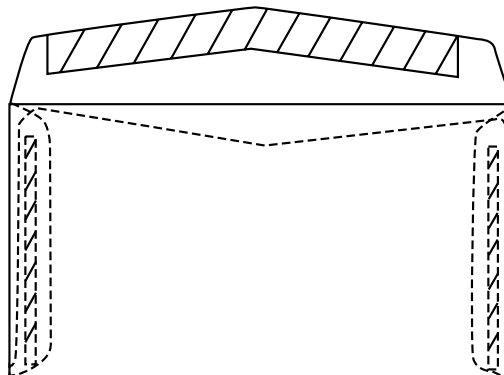
There are many construction styles for envelopes. The three most common styles of office envelopes used in Federal offices are shown below. Critical use information is included in each procurement contract. Generally these envelopes are suitable for insertion of correspondences either manually or by automated equipment; for letterpress and offset printing, processing in laser printers, and automated mailing sorting equipment. The printed matter may include text and line illustrations.



Style A: High cut diagonal seam open side envelopes.
The broken lines show style of cut on back of envelopes.



Style B: Web style diagonal seam envelopes.



Style C: Web style side seam envelopes.

Part 4

**STATUTORY AUTHORITY
AND
ACCEPTANCE CRITERIA**

Introduction.

Attention is invited to the following sections of Title 44 U.S. Code relative to the procurement of paper for the United States Government. By letter dated December 17, 1998, the Joint Committee on Printing requested the GPO Director to carry out the Committee's authorities and responsibilities contained in the following sections of Title 44.

Section 509--"Standards of paper; advertisements for proposals; samples.

The Joint Committee on Printing shall fix upon standards of paper for the different descriptions of public printing and binding and the Director of the Government Publishing Office, under their directions, shall advertise in six newspapers or trade journals, published in different cities, for sealed proposals to furnish the Government with paper, as specified in the schedule to be furnished applicants by the Director, setting forth in detail the quality and quantities required for the public printing. The Director shall furnish samples of the standard of papers fixed upon to applicants who desire to bid.

(Pub. L. 90-620, Oct. 22, 1968, 82 Stat. 1244.)

HISTORICAL AND REVISION NOTES

Based on 44 U.S. Code, 1974 ed., Section 5 (Jan. 12, 1895, ch. 23, Section 3, 28 Stat. 601; Mar. 3 1925, ch. 421, section 1, 43 Stat. 1105).

SECTION REFERRED TO IN OTHER SECTIONS

This section is referred to in section 515, 1121 of this title."

Section 513--"Comparison of paper and envelopes with standard quality.

The Director shall compare every lot of paper and envelopes delivered by contractor with the standard of quality fixed upon by the Joint Committee on Printing and may not accept paper or envelopes which do not conform to it in every particular. A lot of delivered paper or envelopes which does not conform to the standard of quality may be accepted by the Committee at a discount that in its opinion is sufficient to protect the interests of the Government.

(Pub. L. 90-620, Oct. 22, 1968, 82 Stat. 1245.)

HISTORICAL AND REVISION NOTES

Based on 44U.S. Code, 1964 ed., Section 9 (Jan. 12, 1895, ch. 23, Section 7, 28 Stat. 602; June 20, 1936, ch. 630, title VIII, section 13, 49 Stat. 1553).

SECTION REFERRED TO IN OTHER SECTIONS

This section is referred to in section 515, 1121 of this title."

Section 514--"Determination of quality paper.

The Joint Committee on Printing shall determine differences of opinion between the Director of the

Government Publishing Office and the contractor for paper respecting the paper's quality and the decision of the Committee is final as to the United States. (Pub. L. 90-620, Oct. 22, 1968, 82 Stat. 1245.)

HISTORICAL AND REVISION NOTES

Based on 44 U.S. Code, 1964 ed., Section 10 (Jan. 12, 1895, ch. 23, Section 8, 28 Stat. 602; Mar. 3, 1917, ch. 163, section 6, 39 Stat. 1121).

SECTION REFERRED TO IN OTHER SECTIONS

This section is referred to in section 515, 1121 of this title."

Product Quality Index.

The following acceptance criteria shall be employed to evaluate the paper's conformance to specification.

Paper that does not meet all specification values shall be accepted with no discount providing that the minimum acceptable Product Quality Index (PQI) has been met.

The PQI for a specific paper is determined by assigning demerits to each deficient quality characteristic based on test results. The demerits assigned will vary with category of deficiency. A minor defect shall be assigned 4 demerits, a major defect 12 demerits and a critical defect 36 demerits.

The PQI does not apply whenever an individual property requires "not less than" or "not greater than" in the specification. PQI is applicable only to properties where a tolerance is provided in the specification. "Not less than" means that the test results cannot be less than the requirement cited in the specification. "Not greater than" means that the test results cannot be more than the requirement cited in the specification. Not meeting the "not greater than" or "not less than" requirement means that the paper shall be considered critically defective, and subject to outright rejection.

Definitions.

Minor Defect: Any deviation from a specified value which does not materially reduce the usability of the paper for its intended purpose or require special procedures for printing or processing.

Major Defect: Any deviation from specified values, other than critical, that could result in failure, or materially reduce the usability of the paper for its intended purpose; or may require special procedures for printing or processing, or is a significant deviation from specifications, established standards, or average process capability, or may materially affect the appearance of the product.

Critical Defect: Any deviation from specified requirement that judgment and experience indicate would result in the paper being unusable for its

intended purpose; or is a serious departure from specifications, established standards, or average process capability.

Product Quality Index (PQI) is equal to 100 minus the sum of the assessed demerits for each paper characteristic or property.

$$i = N$$
$$PQI = 100 - \sum_{i=1} C_i$$
$$i = 1$$

where C= characteristic or property.

Paper having a PQI of 70 or greater shall be accepted at the contracted price as meeting the intent and requirement of the specification. Those having a PQI below 70 shall be considered as critically defective, subject to outright rejection.

Criteria for establishing the category of defect and demerits are as follows unless otherwise stated in the specification standard.

Demerit Assessments.

1. Acidity (pH value)		
a. Precision requirement		
<i>Deviation from requirement</i>	Category	Demerits
Less than 0.20 pH unit	Minor	4
0.20 to 0.40 pH unit	Major	12
More than 0.40 pH unit	Critical	36
b. Regular requirement		
<i>Deviation from requirement</i>	Category	Demerits
Less than 0.40 pH unit	Minor	4
0.40 to 0.60 pH unit	Major	12
More than 0.60 pH unit	Critical	36
2. Basis weight		
a. Precision requirement		
<i>Deviation from requirement</i>	Category	Demerits
Not as specified	Critical	36
3. Brightness		
<i>Deviation from requirement</i>	Category	Demerits
Less than 0.5 percentage point	Minor	4
0.5 to 1.0 percentage point	Major	12
More than 1 percentage point OR More than 2 percentage points below the target value.	Critical	36
4. Bursting Strength		
a. Precision requirement		
<i>Deviation from requirement</i>	Category	Demerits
Less than 5%	Minor	4
5% to 10%	Major	12
More than 10%	Critical	36
b. Regular requirement		
<i>Deviation from requirement</i>	Category	Demerits
Less than 10%	Minor	4
10% to 25%	Major	12
More than 25%	Critical	36
5. Calcium carbonate-Same as 2.		

6. Cleanliness-Same as 2.		
7. Color deviation		
a. Precision requirement		
<i>Deviation from requirement</i>	Category	Demerits
Less than 0.5 DE over specified	Minor	4
0.5 to 1.5 DE over specified	Major	12
More than 1.5 DE over specified OR If standard states another DE value as being critically defective.	Critical	36
b. Regular requirement		
<i>Deviation from requirement</i>	Category	Demerits
Less than 1.0 DE over specified	Minor	4
1.0 to 2.0 DE over specified	Major	12
More than 2.0 DE over specified	Critical	36
8. Color 2-sidedness-Same as 2.		
9. Color variation		
<i>Deviation from requirement</i>	Category	Demerits
More than 0.5 DE over specified	Critical	36
10. Equilibrium relative humidity		
a. Precision requirement		
<i>Deficiency</i>	Category	Demerits
Less than ± 1 percentage point	Minor	4
± 1 to ± 2 percentage points	Major	12
More than ± 2 percentage points	Critical	36
b. Regular requirement		
<i>Deficiency</i>	Category	Demerits
Less than ± 3 percentage points	Minor	4
± 3 to ± 5 percentage points	Major	12
More than ± 5 percentage points	Critical	36

11. Folding endurance – Same as 4.

12. Gloss – Same as 4.

13. Opacity

a. Precision requirement

<i>Deviation from requirement</i>	Category	Demerits
Less than 1 percentage point	Minor	4
1 to 2 percentage points	Major	12
More than 2 percentage points OR Individual specimen averaging more than 0.5 percentage point below the stated minimum value.	Critical	36

14. Optical brighteners (fluorescence)

a. Precision requirement

<i>Deviation from requirement</i>	Category	Demerits
Less than 0.5 percentage point	Minor	4
0.5 to 1 percentage point	Major	12
More than 1 percentage point	Critical	36

b. Regular requirement

<i>Deviation from requirement</i>	Category	Demerits
Less than 1 percentage point	Minor	4
1 to 2 percentage points	Major	12
More than 2 percentage points	Critical	36

15. Pick resistance

a. Precision requirement

<i>Deviation from requirement</i>	Category	Demerits
Less than 1 No. below specified	Minor	4
1 to 2 No. below specified	Major	12
More than 2 No. below specified OR Individual specimen averaging more than 1 No. below the stated minimum value.	Critical	36

16. Porosity - Same as 4.

17. Smoothness - Same as 4.

18. Stiffness - Same as 4.

19. Stock – specified fiber content or presence of unbleached or groundwood pulp

a. Precision requirement

<i>Deviation from requirement</i>	Category	Demerits
Less than 3 percentage points from specified	Minor	4
3 to 5 percentage points from specified	Major	12
More than 5 percentage points from specified	Critical	36

20. Tearing strength - Same as 4.

21. Tensile strength - Same as 4.

22. Thickness

a. Precision requirement

<i>Deviation from requirement</i>	Category	Demerits
Less than 2%	Minor	4
2% to 4%	Major	12
More than 4%	Critical	36

b. Regular requirement

<i>Deviation from requirement</i>	Category	Demerits
Less than 4%	Minor	4
4% to 8%	Major	12
More than 8%	Critical	36

23. Thickness variation edge to edge – Same as 4 (regular requirement)

24. Water resistance - Same as 14.

25. All other measurable characteristic and properties, e.g. density, light transmission, reflectance drop, etc. – Same as 2.

26. Subjective or judgement characteristics and properties, e.g. erasing and writing qualities, watermark quality, finish, formation, etc.		
Assessment	Category	Demerits
Fair or rating 2	Minor	4
Marginal or rating 3	Major	12
Unacceptable or rating 4	Critical	36

Examples: Assigning Category and Demerits and Determining the Product Quality Index (PQI) of the Paper Stock.

Below the calculation of Demerits is demonstrated for selected properties.

a. Acidity	Requirement is not less than 6.5	Result is 6.3
Calculation	6.5 - 6.3 = 0.2	
If	Precision requirement	Major Category and 12 Demerits
If	Regular requirement	Minor Category and 4 Demerits
b. Brightness	Requirement is 72 ± 2	Result is 69.2
Calculation	70 - 69.2 = 0.8	
		Major Category and 12 Demerits
c. Bursting Strength	Requirement is not less than 70	Result is 60
Calculation	70 - 60 = 10; 10/70 x 100% = 14.4%	
If	Precision requirement	Critical Category and 36 Demerits
If	Regular requirement	Major Category and 12 Demerits
d. Stock	Not more than 1% groundwood	Result is 3%
Calculation	3 - 1 = 2	
		Minor Category and 4 Demerits
e. Density	Requirement is 1.4 to 1.6	Result is 1.65
Calculation	1.65 - 1.6 = 0.05	
	Use #2 - Not as specified	Refer to Item 28 Critical Category and 36 Demerits

f. Formation	Requirement is uniform	Result is "fair" and "rating 2" Assesment is Minor Category and 4 Demerits
g. Color Deviation	Match provided Sample with DE not greater than 0.25	Result is DE = 0.4
Calculation	0.4 is greater than the specified 0.25	Critical Category and 36 Demerits
	Use #2 - Not as specified	Refer to Item 28 Critical Category and 36 Demerits

Example 1

This paper has demerits assessed for the following properties:

ID Property	Category	Demerits
a. Acidity (regular)	Minor	4
f. Formation	Minor	4
g. Color deviation (precision)	Critical	36

To calculate the **Product Quality Index** for the paper, add up all the demerits and subtract from 100

$$\begin{aligned} \text{PQI} &= 100 - (4+4+36) \\ &\text{OR } 100 - 44 \\ &= 56 \text{ or } \mathbf{NOT\ EQUAL} \end{aligned}$$

Example 2

This paper has demerits assessed for the following properties:

ID Property	Category	Demerits
b. Brightness	Major	12
c. Bursting strength (regular)	Major	12
d. Stock	Minor	4

To calculate the **Product Quality Index** for the paper, add up all the demerits and subtract from 100

$$\begin{aligned} \text{PQI} &= 100 - (12+12+4) \\ &\text{OR } 100 - 28 \\ &= 72 \text{ or } \mathbf{EQUAL} \end{aligned}$$

Part 5

**BASIS WEIGHTS
AND
THICKNESS DATA**

BASIC SIZES FOR REAMS OF 500 SHEETS

Bond, Writing: 17" x 22" **Book, Text, Offset:** 25" x 38"

Bristol: 25.5" x 28.5" **Cover:** 20" x 26"

Index: 25.5" x 30.5" **Ledger:** 24" x 36"

Newsprint: 24" x 36"

A. Text Papers								
Newsprint, JCP A15	Basis Weights	26.1	27.7	30.0				
	Thickness in mils	2.7	2.8	3.0				
Uncoated Heat-Set Machine-Finish Web Text JCP A25	Basis Weight	35						
	Thickness in mils	2.2						
Uncoated Machine-Finish Book End JCP A50	Basis Weight	80						
	Thickness in mils	6.8						
Heat-Set Web Text JCP A55	Basis Weights	40	50	60	70	80		
	Thickness in mils	3.0	3.9	4.7	5.5	6.3		
Uncoated Text JCP A60	Basis Weights	40	50	60	70	80		
	Thickness in mils	3.0	3.9	4.7	5.5	6.3		
No. 1 Smooth-Finish Text JCP A61	Basis Weights	50	60	70	80			
	Thickness in mils	3.9	4.7	5.5	6.3			
Uncoated Colored Text JCP A63	Basis Weights	50	60	70	80			
	Thickness in mils	3.9	4.7	5.5	6.3			
Uncoated Light-Weight Groundwood Text JCP A65	Basis Weight	35						
	Thickness in mils	3.0						
Uncoated 100% Recycled Text JCP A70	Basis Weights	40	45	50	60	70	80	100
	Thickness in mils	3.0	3.5	4.0	4.8	5.5	6.2	8.2
Light-Weight Text (Bible paper) JCP A75	Basis Weight	30						
	Thickness in mils	2.1						
Opacified Text JCP A80	Basis Weights	40	50	60				
	Thickness in mils	3.1	3.9	4.7				

Vellum-Finish Text JCP A90	Basis Weights	50	60	70	80	100			
	Thickness in mils	4.3	5.1	5.9	6.7	8.2			
Smooth and Embossed Text JCP A91 (thickness applies to smooth finish only)	Basis Weights	60	70	80	100				
	Thickness in mils	5.0	5.6	6.3	7.9				
Hi-Bulk Text (Return Mailer) JCP A95	Basis Weight	70							
	Thickness in mils	7.0							
Antique Text JCP A100	Basis Weights	45	60	70					
	Thickness in mils	3.9	5.1	5.9					
50% Cotton Antique Text JCP A110	Basis Weight	40							
	Thickness in mils	3.5							
50% Cotton Laid-Finish Antique Text JCP A120	Basis Weight	70							
	Thickness in mils	5.5							
Coated One-Side (C1S) Text JCP A160	Basis Weights	60	70	80	100				
	Thickness in mils	3.2	3.9	4.5	5.2				
Gloss-Coated Text (Publication Grade) JCP A175	Basis Weight	38							
	Thickness in mils	2.2							
Gloss-Coated Text JCP A180	Basis Weights	50	60	70	80				
	Thickness in mils	2.6	3.0	3.3	3.6				
No. 1 Gloss-Coated Text JCP A181	Basis Weights	70	80	100					
	Thickness in mils	3.3	3.7	4.3					
No. 2 Gloss-Coated Text JCP A182	Basis Weights	70	80	100					
	Thickness in mils	3.3	3.7	4.3					
Durable Gloss-Coated Text JCP A205	Basis Weight	70							
	Thickness in mils	3.7							
Water-Resistant Text JCP A220	Basis Weight	60							
	Thickness in mils	4.2							
High-Yield (Light Coating) Text JCP A230	Basis Weights	35	38	40	45	50			
	Thickness in mils	2.9	3.2	3.3	3.5	3.8			
Matte-Coated Text (Publication Grade) JCP A235	Basis Weights	40	50	60	70				
	Thickness in mils	3.3	3.7	4.3	5.4				

Matte-Coated Text JCP A240	Basis Weights	60	70	80	100				
	Thickness in mils	3.7	4.3	4.9	5.5				
Uncoated Laid-Finish Text JCP A250	Basis Weights	60	70	80					
	Thickness in mils	6.0	6.5	7.4					
Silk / Dull-Coated Text JCP A260	Basis Weights	60	70	80					
	Thickness in mils	3.0	3.5	4.1					
No. 1 Silk / Dull-Coated Text JCP A 261	Basis Weights	70	80	100					
	Thickness in mils	3.5	4.1	4.7					
No. 2 Silk / Dull-Coated Text JCP A 262	Basis Weights	70	80	100					
	Thickness in mils	3.5	4.1	4.7					
Uncoated-Permanent Text JCP A270	Basis Weights	30	40	50	60	70			
	Thickness in mils	2.6	3.5	4.1	4.5	5.0			
Matte-Coated Groundwood Text JCP A280	Basis Weight	35							
	Thickness in mils	3.3							

D. Writing Papers									
Writing JCP D10	Basis Weights	12	16	18	20				
	Thickness in mils	2.4	3.0	3.4	3.8				
Smooth and Embossed Writing JCP D11 (thickness applies to smooth finish only)	Basis Weights	24	28						
	Thickness in mils	4.4	5.0						
100% Cotton Fine Writing JCP D50	Basis Weights	24	28	32					
	Thickness in mils	4.7	5.1	5.5					

E. Map Papers									
50% Map, Lithographic Finish JCP E10	Basis Weights	16	20	28					
	Thickness in mils	2.6	3.0	3.9					
High Wet-Strength Map, Lithographic Finish JCP E20	Basis Weights	20	24						
	Thickness in mils	3.7	4.1						
Offset Map, Lithographic Finish JCP E30	Basis Weights	40	50	60	70				
	Thickness in mils	3.0	3.5	4.1	4.9				

Chemical Wood Map, Lithographic Finish JCP E40	Basis Weights	20	22					
	Thickness in mils	3.7	4.1					
50% Chart, Lithographic Finish JCP E50	Basis Weight	36						
	Thickness in mils	5.3						

G. Bond Papers								
Chemical Wood Forms Bond JCP G05	Basis Weights	9/10	11/12/13	15/16	18	20		
	Thickness in mils	2.4	2.6	3.0	3.3	3.7		
Bond JCP G10	Basis Weights	20	24	28	32			
	Thickness in mils	3.7	4.5	5.0	5.4			
50% Recycled Bond JCP G15	Basis Weights	10	12	15	18	20		
	Thickness in mils	2.4	2.8	3.2	3.6	4.0		
25% Cotton Bond; Archival Quality JCP G40	Basis Weights	16	20	24				
	Thickness in mils	3.6	4.2	4.6				
25% Cotton Bond; 50% Recycled JCP G45	Basis Weights	16	20	24				
	Thickness in mils	3.6	4.2	4.6				
25% Cotton Translucent Bond JCP G50	Basis Weight	16						
	Thickness in mils	2.0						
25% Cotton Opacified Bond; Archival Quality JCP G60	Basis Weights	20	24					
	Thickness in mils	4.0	4.4					
25% Cotton Opacified Bond; 50% Recycled JCP G65	Basis Weights	20	24					
	Thickness in mils	4.0	4.4					
50% Cotton Bond JCP G70	Basis Weights	16	20	24				
	Thickness in mils	3.7	4.1	4.5				
100% Cotton Bond JCP G80	Basis Weights	20	24					
	Thickness in mils	4.1	4.5					

H. Parchment Papers								
100% Cotton Parchment JCP H10	Basis Weight	32						
	Thickness in mils	5.6						
100% Cotton Parchment JCP H20	Basis Weight	65						
	Thickness in mils	7.7						

Laser-Finish Parchment JCP H30	Basis Weights	24	32	65				
	Thickness in mils	4.2	5.5	7.6				
Smooth-Finish Diploma Paper JCP H40	Basis Weight	65						
	Thickness in mils	7.6						

J. Ledger Papers

Ledger JCP J10	Basis Weights	24	28	32	44			
	Thickness in mils	4.0	4.7	5.3	7.3			
25% Cotton Ledger JCP J20	Basis Weights	24	32	44				
	Thickness in mils	4.0	5.3	7.3				
100% Cotton Ledger JCP J30	Basis Weights	24	32	44				
	Thickness in mils	4.0	5.3	7.3				

K. Index Papers

Index JCP K10	Basis Weights	90	110	140	170			
	Thickness in mils	7.4	9.0	11.5	13.5			
25% Cotton Index JCP K20	Basis Weights	90	110	140	170			
	Thickness in mils	7.4	9.0	11.5	13.8			
100% Cotton Index JCP K30	Basis Weight	125						
	Thickness in mils	10						

L. Cover Papers

Gloss-Coated Cover JCP L10	Basis Weights	65	80	100				
	Thickness in mils	6.8	8.1	9.8				
No. 1 Gloss-Coated Cover JCP L11	Basis Weights	65	80	100	120			
	Thickness in mils	6.8	8.0	9.6	11.4			
No. 2 Gloss-Coated Cover JCP L12	Basis Weights	65	80	100	120			
	Thickness in mils	6.8	8.0	9.6	11.4			
Vellum-Finish Cover JCP L20	Basis Weights	50	65	80	100			
	Thickness in mils	5.8	7.7	8.6	10.8			
Smooth and Embossed Cover JCP L21 (thickness applies to smooth finish only)	Basis Weights	65	80	100	130			
	Thickness in mils	7.4	8.4	10.2	13.8			
Uncoated Cover JCP L23	Basis Weights	50	65	80	100			
	Thickness in mils	5.4	7.5	8.2	10.1			

Vellum Bristol Cover JCP L24	Basis Weights	57	67	80				
	Thickness in mils	7.0	8.3	9.9				
Uncoated Laid-Finish Cover JCP L40	Basis Weights	65	80	100				
	Thickness in mils	8.1	9.6	11.6				
Matte-Coated Cover JCP L50	Basis Weights	65	80	100				
	Thickness in mils	5.7	7.0	8.8				
Silk / Dull-Coated Cover JCP L60	Basis Weights	65	80	100				
	Thickness in mils	6.2	7.7	9.2				
No. 1 Silk / Dull-Coated Cover JCP L61	Basis Weights	65	80	100	120			
	Thickness in mils	6.8	8.1	10.1	12.1			
No. 2 Silk / Dull-Coated Cover JCP L62	Basis Weights	65	80	100	120			
	Thickness in mils	6.8	8.1	10.1	12.1			
Coated One-Side (C1S) Cover JCP L70	Basis Weights	<i>(C1S is sold by thickness)</i>						
	Thickness in mils	8	10	12	16	20	24	
Coated Two-Sides (C2S) Cover JCP L72	Basis Weights	<i>(C2S is sold by thickness)</i>						
	Thickness in mils	8	10	12	14	16	20	24
Cast-Coated Cover JCP L80	Basis Weights	<i>(Grade is sold by thickness)</i>						
	Thickness in mils	8	10	12	15	24		

N. Kraft Paper								
No. 2 Kraft JCP N10	Basis Weights	40	50	60	70	80		
	Thickness in mils	3.8	4.2	4.8	5.3	5.9		

O. Miscellaneous Papers								
Gummed, Conventional Adhesive JCP O-10	Basis Weights	16	18	20				
	Thickness in mils	3.2	3.5	3.8				
Optical Character Recognition (OCR) Bond JCP O-25	Basis Weights	16	18	20	24	32		
	Thickness in mils	3.0	3.3	3.8	4.8	6.1		
Optical Mark Read (OMR) Bond JCP O-26	Basis Weight	21						
	Thickness in mils	4.5						
Optical Mark Sense Scanner (OMSS) Bond JCP O-27	Basis Weight	24						
	Thickness in mils	4.4						

Plain Copier, Xerographic (Archival Quality) JCP O-60	Basis Weight	20							
	Thickness in mils	3.9							
High Quality Xerographic Copier JCP O-61	Basis Weights	24	28						
	Thickness in mils	4.4	4.8						
Plain Copier, Xerographic, Laser Printer JCP O-63	Basis Weights	20	24	28					
	Thickness in mils	4.0	4.5	5.0					
Plain Copier, Xerographic JCP O-65	Basis Weight	20							
	Thickness in mils	4							
100% Recycled Plain Copier, Xerographic JCP O-70	Basis Weights	20	24						
	Thickness in mils	4.0	4.6						
Carbonless Bond JCP O-80	Basis Weights	<i>(As specified in the solicitation)</i>							
	Thickness in mils								
Printable Plastic Film JCP O-90	Basis Weights	<i>(Grade is sold by thickness)</i>							
	Thickness in mils	3.7	5.5	7.5	10.5	12.0	14.0	16.0	
Uncoated Synthetic Paper JCP O-91	Basis Weights	<i>(Grade is sold by thickness)</i>							
	Thickness in mils	4	5	6	8	10	12		

P. Tag Boards

High-Finish Manila Tag JCP P10	Basis Weight	150							
	Thickness in mils	11.4							
High-Finish Folder Stock JCP P20	Basis Weights	105	150	165	250	330			
	Thickness in mils	8	11	14	18	24			

Q. Cardboards

Railroad Board JCP Q20	Basis Weights	<i>(Grade is sold by thickness)</i>							
	Thickness in mils	18	30	48					
Chemical Wood Board JCP Q50	Basis Weight	100							
	Thickness in mils	9.8							
High-Finish Red Wallet Board JCP Q80	Basis Weight	160							
	Thickness in mils	14							

R. Miscellaneous Boards									
Pressboard (Type III) JCP R10	Basis Weights	<i>(Grade is sold by thickness)</i>							
	Thickness in mils	15	20	25					
Pressboard (Type I) JCP R11	Basis Weights	<i>(Grade is sold by thickness)</i>							
	Thickness in mils	15	20	25					
Newsboard JCP R20	Basis Weight	100							
	Thickness in mils	20							
Book Cover Board JCP R30	Number of Sheets	9	12	17	19	21	25	31	41
	Thickness in mils	220	170	120	110	98	80	65	49

