

Part 4.

ACCEPTANCE CRITERIA

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Introduction

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) of 70 is 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 the category of deficiency. A *minor defect* shall be assigned 4 demerits, a *major defect* 12 demerits, and a *critical defect* 36 demerits.

Definitions

Minor Defect. Any deficiency from specified values 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 deficiency 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 deficiency 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.

The equation for the calculation of the *Product Quality Index* is as follows:

Product Quality Index is equal to 100 minus the sum of the assessed demerits for each paper characteristic or property.

$$\text{Expressed mathematically, } PQI = 100 - \sum_{i=1}^{i=N} C_i$$

where C=characteristics or properties

Paper having a PQI of 70 or better shall be accepted at the contracted price as meeting the intent and requirement of the specification. That 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:

1. Acidity (pH Value):

a. "Precision Requirements" all stocks when so designated.

<i>Deficiency:</i>	Category	Demerits
Less than 0.20 pH unit	Minor	4
0.20-0.40 pH unit	Major	12
More than 0.40 pH unit	Critical ...	36
Example: Spec (4.5) - 0.3=4.2; Over 4.2 pH but less than 4.5=Minor defect or 4 demerits.		

b. "Regular Requirements" all stocks except those with minimum pH requirements of 7.0 or 7.5 or if no designation in solicitation.

<i>Deficiency:</i>	Category	Demerits
Less than 0.40 pH unit	Minor	4
0.40-0.60 pH unit	Major	12
More than 0.60 pH unit	Critical ...	36

c. Papers with minimum requirements of 7.0 or 7.5 pH value.

<i>Deficiency:</i>	Category	Demerits
Not as specified	Critical ...	36

2. Alpha Cellulose:

<i>Deficiency:</i>	Category	Demerits
Less than 5 percentage points	Minor	4
5-10 percentage points	Major	12
More than 10 percentage points ..	Critical ...	36

3. Basis Weight/Grammage:

<i>Deficiency:</i>	Category	Demerits
Not as specified	Critical ...	36

4. Brightness:

<i>Deficiency:</i>	Category	Demerits
Less than 0.5 percentage point	Minor	4
0.5-1.0 percentage point	Major	12
More than 1.0 percentage point ...	Critical ...	36

Or

More than 2.0 percentage points below target value.

5. Bursting Strength:

a. "Precision Requirements" all stocks when so designated.

<i>Deficiency:</i>	Category	Demerits
Less than 5 pct	Minor	4
5-10 pct	Major	12
More than 10 pct	Critical ...	36

b. "Regular Requirements" all stock when so designated or if no designation in solicitation.

<i>Deficiency:</i>	Category	Demerits
Less than 10 pct	Minor	4
10-25 pct	Major	12
More than 25 pct	Critical ...	36
Example: Spec (400) × 25 pct=100; 400-100=300; Less than 300 Bursting Strength=critical defect or 36 demerits.		

6. Calcium Carbonate—Same as 3 above.

7. Cleanliness—Same as 3 above.

8. Color Deviation (from Standard):

a. "Precision Requirements" all stocks when so designated.

<i>Deficiency:</i>	Category	Demerits
Less than 0.5 DE unit over specified.	Minor	4
0.5 to 1.5 DE unit over specified	Major	12
More than 1.5 DE unit over specified.	Critical ...	36

b. "Regular Requirements" all stock when so designated or if no designation in solicitation.

<i>Deficiency:</i>	Category	Demerits
Less than 1.0 DE unit over specified.	Minor	4
1.0 to 2.0 DE unit(s) over specified.	Major	12
More than 2.0 DE units over specified.	Critical ...	36

Or

If standard states another DE value as being critically defective.

9. Color Variation (Does not include 2-Sidedness):

<i>Deficiency:</i>	Category	Demerits
Within a shipment or between shipments in an order, more than 0.5 DE unit over specified.	Critical ...	36

10. Copper Number (excess copper number):

a. "Precision Requirements" all stocks when so designated.

<i>Deficiency:</i>	Category	Demerits
Less than 10 pct	Minor	4
10-25 pct	Major	12
More than 25 pct	Critical ...	36

b. "Regular Requirements" all stock when so designated or if no designation in solicitation.

<i>Deficiency:</i>	Category	Demerits
Less than 25 pct	Minor	4
25-50 pct	Major	12
More than 50 pct	Critical ...	36

11. Equilibrium Relative Humidity:

a. "Precision Requirements" all stocks when so designated.

<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
Example: Spec (45 pct ±5 pct) ±2; Maximum 45 pct +5+2=52 pct; Minimum 45 pct -5-2=38 pct: Over 52 pct RH or under 38 pct RH=Critical defect or 36 demerits.		

b. "Regular Requirements" all stock when so designated or if no designation in solicitation.

<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

12. Filler—See calcium carbonate.

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13. Flap Adhesive Thickness:			
<i>Deficiency:</i>	Category	Demerits	
Less than 10 pct	Minor	4	
10–25 pct	Major	12	
More than 25 pct	Critical ...	36	
Or			
Flap sticks prematurely to body of envelope or fails to seal under conditions described in the specifications..			
Example: Spec (0.015 mm) × 25 pct=0.00375; 0.015 – 0.0038=0.0112; Less than 0.0112 mm=Critical defect or 36 demerits.			
14. Fluorescence—See optical brightener.			
15. Folding Endurance—Same as 5 above.			
16. Formaldehyde (melamine-formaldehyde)—Same as 3 above.			
17. Gloss—Same as 5 above.			
18. Grammage—See basis weight.			
19. Oil Holdout (of Coating)—Same as 3 above			
20. Oil Penetration—Same as 10 above.			
21. Opacity:			
<i>Deficiency:</i>	Category	Demerits	
Less than 1.0 percentage point	Minor	4	
1.0–2.0 percentage points	Major	12	
More than 2.0 percentage points	Critical ...	36	
Or			
Individual specimen averaging more than 0.5 percentage point below minimum stated in specification.			
22. Optical Brighteners (fluorescence):			
a. “Precision Requirements” all stocks when so designated.			
<i>Deficiency:</i>	Category	Demerits	
Less than 0.5 percentage point	Minor	4	
0.5–1.0 percentage point	Major	12	
More than 1 percentage point	Critical ...	36	
Example: Spec (2 pct) +1=3 pct; Over 3 pct Optical Brighteners=Critical defect or 36 demerits.			
b. “Regular Requirements” all stock when so designated or if no designation in solicitation.			
<i>Deficiency:</i>	Category	Demerits	
Less than 1 percentage point	Minor	4	
1–2 percentage points	Major	12	
More than 2 percentage points	Critical ...	36	
23. Pick Resistance (Wax Pick):			
<i>Deficiency:</i>	Category	Demerits	
Less than 1 below No. specified ...	Minor	4	
1.0–2.0 below No. specified	Major	12	
More than 2.0 below No. specified	Critical ...	36	
Or			
Individual specimen averaging 1 No. below minimum stated in specification..			
24. Porosity—Same as 5 above.			
25. Rosin (excess)—Same as 5 above.			
26. Size—Same as 3 above.			
27. Smoothness—Same as 5 above.			
Example: Spec (50–125)×25 pct; 50×25 pct=12.5; 125×25 pct=31.25; 50–12.5=37.5; 125+31.25=156.25. Less than 37.5 or more than 156.25=Critical defect or 36 demerits.			
28. Stiffness—Same as 5 above.			
29. Stock (fiber analysis):			
a. Papers required to contain 25 pct, 50 pct, 100 pct cotton/linen fibers or 100 pct of specified fiber, other than cotton/linen.			
<i>Deficiency in specified fiber:</i>	Category	Demerits	
Less than 3 percentage points	Minor	4	
3–5 percentage points	Major	12	
More than 5 percentage points	Critical ...	36	
Example: Spec (100 pct) –3=97 pct; Over 97 pct up to 100 pct cotton/linen fibers=Minor defect or 4 demerits.			
<i>Presence of unbleached and/or groundwood (other than Kraft):</i>	Category	Demerits	
Less than 3 percentage points	Minor	4	
3–5 percentage points	Major	12	
More than 5 percentage points	Critical ...	36	
Or			
More than 2 pct lignin content. Example: Spec (100 pct)–3=97 pct; Over 97 pct up to 100 pct cotton/linen fibers=Minor defect, and spec (100 pct)–3 pct unbleached or groundwood=97 pct; Over 97 pct up to 100 pct cotton/linen fibers=Minor defect, 4 demerits.			
b. Other stocks required to be free from unbleached or groundwood pulp.			
<i>Presence of unbleached and/or groundwood:</i>	Category	Demerits	
Less than 3 percentage points	Minor	4	
3–5 percentage points	Major	12	
More than 5 percentage points	Critical ...	36	
Or			
More than 2 pct lignin content.			
c. Stocks required to have not more than specified percentages of lignin and/or groundwood.			
<i>Excess pct lignin and/or groundwood:</i>	Category	Demerits	
More than 1 percentage point	Critical ...	36	
from specified.			
30. Tearing Strength—Same as 5 above.			
31. Tensile Strength—Same as 5 above.			
32. Thickness:			
a. Postal Card and 100 pct Cream-White Index Paper.			
<i>Deficiency:</i>	Category	Demerits	
Not as specified	Critical ...	36	
b. “Precision Requirements” all stocks when so designated except “a” above.			
<i>Deficiency:</i>	Category	Demerits	
Less than 2 pct	Minor	4	
2–4 pct	Major	12	
More than 4 pct	Critical ...	36	
Example: Spec (0.120±0.013)×4 pct; 0.120×4 pct=0.0048; Maximum 0.120+ 0.013+ 0.0048= 0.1378; Minimum 0.120– 0.013– 0.0048= 0.1022; Over 0.1378 or less than 0.1022=Critical defect or 36 demerits.			
c. “Regular Requirements” all stock when so designated or if no designation in solicitation except “a” above.			
<i>Deficiency:</i>	Category	Demerits	
Less than 4 pct	Minor	4	
4–8 pct	Major	12	
More than 8 pct	Critical ...	36	
d. Variation on individual sheets from one edge to the other.			
<i>Deficiency:</i>	Category	Demerits	
Less than 10 pct	Minor	4	
10–25 pct	Major	12	
More than 25 pct	Critical ...	36	
Example: Spec (0.011)×25 pct; 0.011×25 pct=0.00275; 0.011+0.00275=0.014; Variation over 0.014=Critical defect or 36 demerits.			
33. Water Resistance—Same as 5 above.			
34. All Other Measurable Characteristics (such as density, light transmission, reflectance drop, etc.):			
<i>Deficiency:</i>	Category	Demerits	
Not as specified	Critical ...	36	
35. Judgment Characteristics (such as evaluation of construction, erasing/writing qualities, watermark, finish, formation etc.):			
<i>Assessment:</i>	Category	Demerits	
Fair or rating “2”	Minor	4	
Fair minus or rating “3”	Major	12	
Unacceptable or rating “4”	Critical ...	36	
Other Information			
Attention is invited to the following sections of Title 44 U.S. Code relative to the procurement of paper for the United States Government:			
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 Public Printer, under their direction, 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 Public Printer, setting forth in detail the quality and quantities required for			

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the public printing. The Public Printer 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 sections 515, 1121 of this title.”

Section 513—“Comparison of paper and envelopes with standard quality.

The Public Printer shall compare every lot of paper and envelopes delivered by a 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 44 U.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 sections 515, 1121 of this title.”

Section 514—“Determination of quality of paper.

The Joint Committee on Printing shall determine differences of opinion between the Public Printer and a 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 sections 515, 1121 of this title.”