



## **Specification for Pressure Sensitive Adhesive Label Stock for Laser Printers for Application to Boxboard, Paper, Plastic, or Metal Housing or Metal Storage Furniture**

October 2015

### **I. Scope:**

This specification is for Laser Printable Label Material for application to housing substrates, including paper, paper board, plastic, or metal, as well as metal shelving. Applicable printer and toner cartridge models, label configuration and dimensions will be specified in the procurement document.

Applications: Barcode or other labels affixed to paper, paper board, plastic, or metal substrates for housing and storage. The materials specified herein are not suitable for direct application to documents or records.

### **II. Requirements**

1. Composition: The face-stock material must be a paper substrate bearing an acrylic polymer adhesive.

#### **A. Paper Face-Stock**

The label stock shall be made from any unbleached pulp that meets the following specification:

- Buffered and Alkaline sized (surface, internal, or both)
- A pH within the range of 8.0-10.0 as determined by TAPPI T-509 or pH by slurrying sample pulp before measurement
- Free of alum-rosin sizing (TAPPI T-408)
- Contains <0.0008% reducible sulfur (TAPPI T-406)
- Thickness of 1 - 3 mil. Height and width will be specified in the procurement document.
- Free of particles or other impurities such as:
  - Metals
  - Waxes
  - Plasticizers (i.e. wet strength additives)
  - Residual bleach
  - Peroxide

#### **B. Adhesive**

The pressure-sensitive adhesive layer must possess high permanence characteristics such that labels, once applied, remain attached permanently and can be removed only with difficulty. The adhesive must be clearly identifiable as an acrylic polymer or copolymer by its infrared spectrum.

- The addition of adhesive shall not negatively impact the specification of the paperboard, such as reduce the pH or alkaline reserve, increase the sulfur content, or decrease the stiffness.



- If it is necessary to buffer the adhesive, the same buffer shall be used as in the paperboard (calcium or magnesium carbonate, or a combination of both).
2. **Bond Strength:** The adhesive must exhibit sufficient bond strength for the label to support a test weight of 200 grams for 10 minutes of a sample size of 1 by 2.5 inches. The test procedure is a 90-degree peel test modified from ASTM D2860/D2860M-04, Procedure B, in which the test substrate is metal, plastic, paper, and paper board.
  3. **Other Label Properties:**
    - A. The label face-stock must be able to support strong ink adhesion from the laser printer giving a clean, legible, abrasion-resistant image.
    - B. The label must be able to be read by a scanner.
    - C. The release liner must allow for easy and complete peeling of the face-stock without shearing of the adhesive layer.
    - D. The label stock must not emit odors deemed detrimental to the work and/or storage environment in NARA according to TAPPI T483.
  4. **Workmanship**
    - A. The label sheet must lie flat without any curling, lifting, or buckling, must not have any evidence of the adhesive oozing beyond the label edges, and permit problem-free self-feeding from a stacking paper tray.
    - B. All label edges will be cut square and clean, and of the appropriate size(s) specified in the purchase order.
    - C. Dimensions will be specified on the purchase order.

## **RESPONSIBILITY FOR TESTS**

The Contractor is responsible for quality control to ensure the specifications of this contract are met. The Contractor shall provide test results to the Contract Specialist (CS) and/or Contracting Officer (CO), for each production lot used to provide supplies under this contract. The test results shall display, at a minimum, the characteristics listed below and shall be provided at least 30 days prior to shipping any items from the production lot under this contract. The Contractor may use his or her own facilities or any commercial laboratory certified to run the quality assurance test methods listed below. The National Archives and Records Administration (NARA) reserves the right to perform quality assurance at any time during the contract where such tests are deemed necessary to assure that supplies and services conform to the specifications. Therefore, ten samples of each item purchased shall be sent to the CS within 14 days after award of the contract. Additionally, the Contractor shall provide a sample of a new production lot at any time, upon request of the Government.

### Table of QC Test Items and Specifications

Test Items	Spec. Targets	Notes (test methods, test conditions, etc.)
<b>Alum-rosin sizing</b>	Negative	TAPPI T-408
<b>Reducible Sulfur</b>	<0.0008%	TAPPI T-406
<b>Alkaline reserve</b>	3-6% (calculated as CaCO <sub>3</sub> )	TAPPI T-553 (modified by slurring sample pulp before measurement)
<b>pH</b>	8.0 – 10.0	TAPPI T-509 (cold extraction, modified by slurring pulp)
<b>Adhesive Bond Strength</b>	Sample of 1 by 2.5 in will support 200 g for 10 min In a 90° Peel Test	ASTM D2860/D2860M-04, Procedure B
<b>No off-gassing/odors</b>	PASS	TAPPI T-483

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**Revision note:**

This is a new specification as of 2015.