

TAPPI Roll/Package Labeling Guidelines

DON HILDEBRAND

Proposed guidelines would make labels more consistent and useful.

In November of 1988, the Packaging Committee of TAPPI's Finishing and Converting Division established a Committee Assignment (CA) to study roll/package labels and to develop guidelines for their content and placement on packages. This CA resulted in the formation of a Task Force that has implemented the study through many discussion meetings, label reviews, two industry surveys, many conference calls, and volumes of written correspondence. This report reflects the consensus and conclusions of the Task Force and is proposed as its recommended guidelines.

Roll/package labels currently used throughout the paper industry vary enormously, with inconsistent formats, widely different imprinted information, and identifier numbering systems that do not follow recent TAPPI guidelines. Because of these nonconformity issues it was determined that a thorough study and evaluation be implemented, from which conclusions and guidelines might be derived.

The following guidelines represent the work of many very dedicated individuals of diverse backgrounds and industry affiliations. Given that many standards, guidelines, and specifications already exist which refer to label formats, barcodes, imprinted information, numbering systems, etc., the Task Force strongly suggests that all readers of these new and more uniformly adaptable guidelines consider the four statements listed below:

1. Labeling specifics within certain segments of the industry may be application dependent.
2. Constantly changing and emerging technologies necessitate ongoing reviews, modifications, or updates to any existing guidelines.
3. Electronic data interchange (EDI) has become an increasingly important part of customer/supplier information transfers. Any guidelines for physical labeling should appropriately consider current and future implementation of EDI systems.
4. Label uniformity and quality will permit both supplier and user to implement efficient and error-free automated systems for material tracking and inventory control.

TAPPI Roll/Package Labeling Guidelines

1. Definition/purpose of roll/package label

The roll/package label is a unique and separately affixed sheet of material (commonly paper or paperlike) that is attached to the outer surface(s) of a paperstock roll/package. The label will convey (through information imprinted on its surface) product data specific to the roll or rolls contained within the package. For purposes of these guidelines "roll" is considered rollstock (manufactured at a papermill) that is utilized as a raw material for ultimate converting or printing through subsequent remanufacturing processes.

2. General organization and format of label

2.1 Overview

The label should be formatted with three general areas for information to be located.

2.1.1 Fixed information area

It is recommended that the upper portion of the label sheet (other than the preprinted area) be reserved for imprinting the information designated as fixed information (Article 3.1.1).

2.1.2 Variable information area

It is recommended that the lower portion of the label sheet (other than the preprinted area) be reserved for imprinting the information designated as variable information (Article 3.1.2).

2.1.3 Barcode area

It is recommended that the barcoded information (Article 3.2) be located on the label sheet in an area reserved (across the label face) between the upper (fixed information area) and the lower (variable information area) sections.

2.1.4 Preprinted information area

It is recommended that colored (other than white) borders, lines, boxes, or blocks, logos, symbols, etc., be located around the label sheet, as determined by the paper manufacturer, with due consideration given to the guidelines herein stated. It has been determined that these label characteristics do not carry significant importance with paperstock users but that information readability does, therefore the label preprint should be implemented in a manner which contributes to maximum information readability.

2.2 Graphic example

3. Recommended information to be printed on labels

3.1 Human-readable information

Information imprinted in human-readable form should include the following items:

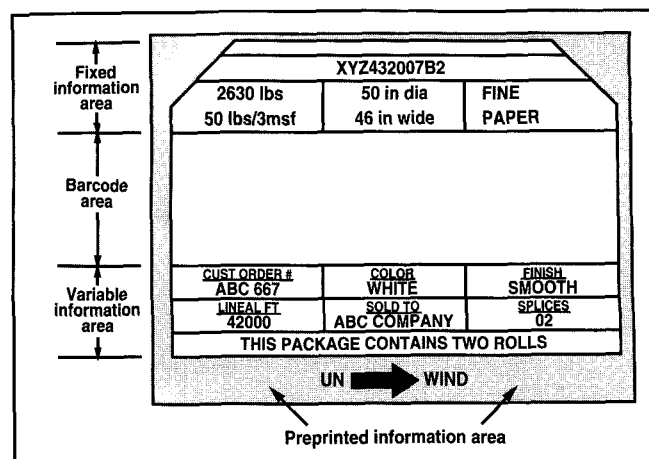
3.1.1 Fixed information area (see Article 2.1)

- Roll/package identification number (TAPPI number recommended as Option)
- Basis weight
- Weight
- Product grade/description
- Width dimension
- Diameter dimension

3.1.2 Variable information area (see Article 2.1)

- Customer order number(s)
- "Sold to" information
- Finish
- Color
- "Ship to" information
- Lineal feet
- Number of rolls in package
- Product grade code
- Other roll I.D. number in package

Example of suggested labeling information



- Basis size
- Other (deckle, number of splices, etc.)

3.1.3 Preprinted information area(s) (see Article 2.1)

- Wind direction indicators
- Fixed information area "block" identifiers
- Logos or other manufacturers symbols

3.2 Barcoded information

It is recommended that the only information printed on a label in barcoded form is the roll identifier numbers. As stated in 3.1.1, this number should be the TAPPI (Option 1) number (10.1, 10.2). All other information printed on a label should be in human-readable form.

4. Printing characteristics

4.1 Overview

It is clearly recognized and understood that a wide variety of printing technologies and application techniques exist within the industry. Although it is not within the charter of this study to recommend or suggest that any specific technology or technique be adopted, it is important to reflect, in these guidelines, the results of the study.

The study conducted uncovered a clear mandate by those involved that, of all the issues discussed, the most important is the “readability” of the information printed. Readability, by humans and under the environments and conditions common throughout this industry, is the most important item this study and the resultant guidelines can emphasize. Labels are intended to be read by people and therefore should be designed, printed, and applied in such a manner to always facilitate ease of human readability.

4.2 Characteristics

4.2.1 Fixed information characters should be printed with 1-in.-high, “bold” type fonts. At a minimum, if space on label is constrained, the following fixed information has priority as 1-in.-high characters.

- Roll identification number
- Basis weight
- Weight

4.2.2 Variable information characters should be printed with clear, well-defined characters as large as are possible given the total amount of space available in the variable information area.

4.2.3 The print background should be white (not colored or tinted by preprint), offering a high level of contrast, and the print itself should be as dark (black) as possible to afford maximum contrast.

5. Barcodes

5.1 Symbology

It is recommended that Code 39 be adopted as the preferred symbology (10.3). This is an alpha-numeric code that easily supports the TAPPI number.

5.2 Location and quantity

It is recommended that barcodes be printed in an area reserved as such. This area should be between the Fixed Information and

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Variable Information Areas and should span across the width of the label (see Article 3.2).

The roll identifier barcode should be repeated horizontally across the reserved space. The results of the study would indicate that two or three barcodes would be preferred. The exact quantity will depend upon label size, length of barcoded information, and technical specifications of the barcode.

5.3 Technical specifications

The following basic specifications are recommended:

- X dimension (the narrow bar width) should be in the 20–30 mil range. For impact-type dot matrix printers 30 mil is preferred.
- The preferred ratio of wide-to-narrow barwidths is 3:1. A ratio of 2.5:1 should be exceeded whenever the X dimension is less than 25 mils.
- Barcode height should be 1.5-in. minimum.
- Quiet zone should be 0.5-in. minimum.

- White label stock and inks with high carbon content should be used to provide maximum reflectivity. The barcode should not be printed on a preprinted area, nor should the quiet zone lie in a preprinted area.
- Barcode quality should follow the specifications listed in the ANSI Print Quality Guideline (10.4). An ANSI rating of "A" should be achieved at the printing site; at the receiving location it should be no less than "B."

6. Units of measurement

All units of measurement should be given in the units specific to both the measurement being given and the international standard (English, metric, etc.) agreed to with the paper user. It is not the intention of these guidelines to mandate or guide participants toward a specific measurement standard. If a standard (international) is adopted (by the industry) in the future these guidelines may be revised.

7. Label physical characteristics

7.1 Label size

Label size should be determined by the amount of information and label printing technology utilized. The study that these guidelines are based upon revealed that label size, as such, was not important to paper users as long as the necessary, readable information was present. Label sizes from 8.5-in. x 11-in. to 16-in. x 18-in. have been noted. Since the actual “printable” area available is of most importance, these guidelines suggest that a nominal label should contain 150–250 in.² of printable area.

7.2 Media

Label media should be chosen which will provide minimum ink spread and maximum contrast reflectivity to ensure high character and barcode quality/readability. Compatible materials (including inks, toners, etc.) should be selected which, when combined with the method of application, produce wrinkle-free, smear-free, scuff-resistant, affixed labels.

Label stock containing “peel-off” type sections (often used to allow barcodes to be removed for use in office or other accountability functions) are considered optional by these guidelines. It should be understood that study results indicated users often desire one or more peel-off style barcodes as part of the label. These guidelines list them as optional as a result of the inherent technological barriers in implementing peel-off style labels through semiautomatic or automatic applications and printers. These peel-off style labels impose, in general, a print quality and application quality compromise that should be avoided and therefore they are suggested as optional.

8. Label placement on roll/package

8.1 Location

It is recommended that the package label be affixed on the outer surface of the bilge (rolling surface) near the top end.

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Where applicable, or deemed necessary, an optional label may be affixed on the outer surface of the top end (flat surface). This label may contain some or all of the information printed on the roll/package label.

8.2 Quantity

It is recommended that one or two labels be placed on the outer surface (bilge) of the package. If two labels are used, the labels should be placed 180° apart.

8.3 Supplemental labels

On multiple roll packages a supplemental label (one for each additional roll in the package) should be affixed to the bilge (rolling surface) as near to the actual location of the roll as possible. It is clearly recognized that this may afford application difficulties and is therefore suggested where practical. These supplemental roll labels may or may not be the same size/configuration as the package label.

9. Quality assurance

Suppliers should use verifiers to regularly monitor barcode print quality. If barcodes are printed via technologies that produce reduced quality over time, the verifier readings will support timely corrective actions (such as ribbon replacement in a dot matrix

printer). Suppliers should also establish programs with their customers to regularly monitor the readability of barcode targets as received at their destination. Customers should be allowed to audit each mill's quality assurance program.

10. References

1. TAPPI TIS 1004-01 1989 "Suggested formats for designing and developing roll numbers for rolls of paper and paperboard (TAPPI roll numbers)"
2. GCA EMBARC Committee/TAPPI Roll Number Study Group, "Introduction to the updated TAPPI roll identifier," Graphic Communications Association, 100 Daingerfield Road, Alexandria, VA 22314-2888.
3. ANSI MH10.X-1981 "American National Standards Specifications for barcode symbols on transport packages and unit loads"
4. ANSI Print Quality Guideline ANSI X3.182-1990 "Procedures for measuring quality parameters of printed barcode symbols"
5. GCA Standard 103-1985 "Specification EMBARC: electronic manifesting and bar coding of paper stock shipments" 